National Library of Canada
Bibliothèque nationale du Canada

Canadian Theses Service
Services des thèses canadiennes

Ottawa, Canada
K1A 0N4

CANADIAN THESES

THÈSES CANADIENNES

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us an inferior photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30. Please read the authorization forms which accompany this thesis.

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de qualité inférieure.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30. Veuillez prendre connaissance des formules d'autorisation qui accompagnent cette thèse.

THIS DISSERTATION
HAS BEEN MICROFILMED
EXACTLY AS RECEIVED

LA THÈSE A ÉTÉ
MICROFILMÉE TELLE QUE
NOUS L'AVONS REÇUE

Canada

NL 339 (r. 86/01)

193

National Library of Canada
Bibliothèque nationale du Canada

0-315-26925-1

Canadian Theses Division
Division des thèses canadiennes

Ottawa, Canada
K1A 0N4

PERMISSION TO MICROFILM — AUTORISATION DE MICROFILMER

• Please print or type — Écrire en lettres moulées ou dactylographier

Full Name of Author — Nom complet de l'auteur

MICHAEL J. MAHON

Date of Birth — Date de naissance	Country of Birth — Lieu de naissance
JUNE 25, 1959	CANADA

Permanent Address — Résidence fixe

2C 1720 Corydan Ave.
Winnipeg, Manitoba
R3N 0K2

Title of Thesis — Titre de la thèse

AN ATTRIBUTIONAL ANALYSIS OF MOTOR PERFORMANCE OUTCOMES AND THE DEVELOPMENT OF LEARNED HELPLESSNESS IN EDUCABLE MENTALLY RETARDED BOYS.

University — Université

UNIVERSITY OF ALBERTA.

Degree for which thesis was presented — Grade pour lequel cette thèse fut présentée

M. SC.

Year this degree conferred — Année d'obtention de ce grade	Name of Supervisor — Nom du directeur de thèse
1983	DR. A. E. WAUL

Permission is hereby granted to the NATIONAL LIBRARY OF CANADA to microfilm this thesis and to lend or sell copies of the film.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

L'autorisation est, par la présente, accordée à la BIBLIOTHÈQUE NATIONALE DU CANADA de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans l'autorisation écrite de l'auteur.

Date	Signature
August 8, 1983	Michael J. Mahon

NL-91 (4/77)

THE UNIVERSITY OF ALBERTA

AN ATTRIBUTIONAL ANALYSIS OF MOTOR PERFORMANCE OUTCOMES AND THE DEVELOPMENT OF LEARNED HELPLESSNESS IN EDUCABLE MENTALLY RETARDED BOYS

(C)

by

MICHAEL JAMES MAHON

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF SCIENCE

DEPARTMENT OF PHYSICAL EDUCATION
AND SPORT STUDIES

EDMONTON, ALBERTA

FALL, 1983

THE UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR MICHAEL JAMES MAHON

TITLE OF THESIS AN ATTRIBUTIONAL ANALYSIS OF MOTOR PERFORMANCE OUTCOMES AND THE DEVELOPMENT OF LEARNED HELPLESSNESS IN EDUCABLE MENTALLY RETARDED BOYS

DEGREE FOR WHICH THESIS WAS PRESENTED MASTER OF SCIENCE

YEAR THIS DEGREE GRANTED 1983

Permission is hereby granted to THE UNIVERSITY OF ALBERTA LIBRARY to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or scientific research purposes only.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

(Signed) Michael J. Mahon

PERMANENT ADDRESS:

22 1720 Corydon Ave

Winnipeg Manitoba

R3N 0K2

DATED July 20 1983

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled AN ATTRIBUTIONAL ANALYSIS OF MOTOR PERFORMANCE OUTCOMES AND THE DEVELOPMENT OF LEARNED HELPLESSNESS IN EDUCABLE MENTALLY RETARDED BOYS submitted by MICHAEL JAMES MAHON in partial fulfillment of the requirements for the degree of Master of Science in Physical Education.

. . . . . .

Supervisor

. . . . . .

. . . . . .

. . . . . .

Date . . . July 20. 1983

DEDICATION

To my mother and father for their
understanding and support throughout
these many years of study

ABSTRACT

The primary objective of this study was to analyze educable mentally retarded boys' attitudes towards their successes or failures on a gross motor task. The study also looked at the perceived competence of the subjects under study. As a result, the investigation was formulated into three phases.

The Perceived Competence Scale for Children was administered to 48 educable mentally retarded boys in phase one of this study. The scale score results were found to be similar to those of normal children reported by Harter (1982). Contrary to earlier predictions, there was no developmental decline in the scores of the educable mentally retarded boys.

Phase two consisted of the educable mentally retarded boys' attributing their success and failures on a ball rolling task to the causal attributions of ability, effort, task difficulty, and luck using an attribution box. As predicted, the subjects made attributions characteristic of low achievers. The success group ascribed their performance to effort, task difficulty, and luck while the failure group attributed theirs to ability. No support was found for the prediction that there would be a developmental trend in that older boys would be more prone to low achievement attributions. Further, the findings did support the notion that mentally retarded children are susceptible to the development of the phenomenon of learned helplessness.

The third phase of the study consisted of the subjects' answering four subjective questions about their performance on the ball rolling task. The majority of the boys appeared to be quite hesitant in answering the questions. The answers given however did appear to support the idea

that educable mentally retarded boys are prone to the development of learned helplessness.

The ramifications of the results of this study in terms of teaching and coaching were discussed. Further developmental research in this area was also suggested.

ACKNOWLEDGEMENTS

There are a great number of people who have contributed in one way or another to the completion of this thesis.

To Dr. A.E. Wall who has been both a friend and most inspiring advisor, thank you.

To Dr. M. Smith for the many hours of discussion during the course of writing this thesis, thank you.

To Dr. E.J. Watkinson and Dr. R. Mulcahy for their astute comments during my defense, thank you.

To Mrs. Cheryl Luchkow for her skillful typing of this thesis, thank you.

To all my fellow grad students for those many discussions over coffee or a few ales, thank you.

To my good friends Dan and Phil for their aid in keeping things in perspective.

Finally, to my wife Maureen for her many hours of proofreading and support during those hours of frustration we all experience during the course of an endeavor such as this.

TABLE OF CONTENTS

CHAPTER		PAGE
I	INTRODUCTION	1
	Statement of the Problem	6
	Operational Definitions	8
	Hypotheses	8
	Learned Helplessness	8
	Perceived Competence	8
	Delimitations	9
II	A SELECTED REVIEW OF RELATED LITERATURE	10
	The Development of Attribution Theory	10
	Heider's Common Sense Psychology	11
	The Concept of Can	13
	The Concept of Trying	13
	Difficulty	14
	Opportunity and Luck	15
	The Correspondent Inference Theory of Jones and Davis	16
	The Attribution Theory of H.H. Kelley	18
	Information Level	20
	Summary	21
	An Attributional Theory of Behaviour	22
	Causal Dimensions	25
	An Attributional Theory of Motivation	30
	Summary	39
	The Theory of Learned Helplessness	39
	The Origins of Learned Helplessness	39

CHAPTER PAGE

Attributions in Relation to Learned Helplessness 43

Learned Helplessness in the Mentally Retarded 48

Summary 52

Competence Motivation 53

White's Concept of Competence 53

Effectance 55

Effectance Motivation and Perceived Competence: A Developmental Model 57

Empirical Support 65

Evidence with Respect to the Mentally Retarded 70

The Perceived Competence Scale for Children 73

Summary 75

III METHOD 76

Sample 76

Apparatus and Tasks 77

The Perceived Competence Scale for Children 77

Attribution Measuring Device 78

Ball Rolling Task 79

Subjective Questionnaire 80

Procedures 81

Phase 1. The Perceived Competence Scale for Children 81

Phase 2. Causal Attributions for Successes or Failures at the Ball Rolling Task 82

Phase 3. Subjective Questionnaire 83

CHAPTER		PAGE
IV	RESULTS AND DISCUSSION	84
	Causal Attributions and Task Performance: Results	84
	Causal Attributions	84
	Ability	84
	Effort	90
	Task Difficulty	90
	Luck	91
	Ball Rolling Task	92
	Causal Attribution and Task Performance: Discussion	93
	Subjective Questionnaire: Results and Discussion	96
	Question 1. Is this an easy task?	97
	Question 2. Do you think if you tried this task again you would succeed or fail?	98
	Question 3. Do you think your friends or classmates would succeed or fail at this task?	99
	Question 4. Do you think your friends would do better than you, worse than you, or the same as you?	100
	The Perceived Competence Scale for Children: Results	101
	Comparison of Data to Harter (1982) Norms	103
	Age Differences on Mean Subscale Scores	103
	Cognitive Competence	105
	Social Competence	105
	Physical Competence	105
	General Self-Esteem	105
	The Perceived Competence Scale for Children: Discussion	106

CHAPTER		PAGE
	General Discussion	111
V	CONCLUSIONS, APPLICATIONS AND RECOMMENDATIONS	113
	Conclusions	113
	Applications and Recommendations	115
REFERENCES		118
APPENDICES		125
APPENDIX A.	Perceived Competence Scale for Children	126
APPENDIX B.	Results from ANOVAS	131
APPENDIX B-1.	ANOVA for Ability Attribution	132
APPENDIX B-2.	ANOVA for Effort Attribution	133
APPENDIX B-3.	ANOVA for Task Difficulty Attribution	134
APPENDIX B-4.	ANOVA for Luck Attribution	135
APPENDIX B-5.	ANOVA for Ball Rolling Task Performance Scores	136
APPENDIX B-6.	ANOVA for Cognitive Competence	137
APPENDIX B-7.	ANOVA for Social Competence	138
APPENDIX B-8.	ANOVA for Physical Competence	139
APPENDIX B-9.	ANOVA for General Self-Esteem	140
APPENDIX C.	Results Sheets	141

LIST OF TABLES

TABLE	Description	PAGE
1	Descriptive Characteristics of Educable Mentally Retarded Boys	76
2	Means and Standard Deviations for Attribution Scores Following Each Set of Success or Failure Feedback	85
3	Significant Main Effects Derived from ANOVA for 4 Causal Attributions	87
4	Summary of Mean Scores for Attributions of Success and Failure Groups	90
5	Mean Subscale Scores and Standard Deviations	101
6	Mean Subscale Scores and Standard Deviations By Grade for Four Samples	102
7	Significant Main Effects Derived from ANOVA for 4 Perceived Competence Subscales	103

LIST OF FIGURES

FIGURE		PAGE
1	The action-attribute paradigm	17
2	Cognitive and behavioural sequence in an attributional model of achievement behaviour	24
3	Weiner's classification scheme for the perceived determinants of achievement behaviours	27
4	A three dimensional taxonomy of perceived causes of success and failure	28
5	The current attributional model of achievement motivation	31
6	The hypothesized relationship between causal attributions for success and failure and the magnitude of achievement-related affects of pride and shame	35
7	Schematic representation of research results of differential effects of success/failure on high and low achievement need persons	37
8	Effectance motivation, adapted from White (1959)	58
9	Initial extension of White's (1959) effectance motivation formulation	61
10	Mean attribution scores as a function of success and failure conditions for ability and effort	88
11	Mean attribution scores as a function of success and failure conditions for task difficulty and luck	89
12	Mean competence subscale scores for each age group	104

If a man does not keep pace
with his companions,
perhaps it is because he hears a
different drummer.
Let him step to the music he hears,
however measured or far away.

Henry David Thoreau

CHAPTER I

INTRODUCTION

The mentally retarded population has been subject to a staggering amount of research in a number of areas. One such area, which is the basis of this body of research, is concerned with the differential effects that success and failure have on the performance of these individuals. A wealth of this literature has suggested that mentally retarded individuals are far more susceptible to, and experience a greater amount of failure than the "normal" population (Cromwell, 1963; Zigler, 1971). Many of these investigations have established that the inordinately high amount of failure mentally retarded individuals encounter leads to motivational deficits. A comparative dearth of research has investigated whether these consistent experiences with failure contribute to a developmental decrease in the mentally retarded child's motivation to perform in various domains. In an attempt to investigate the possibility of these developmental effects occurring with respect to their performance within the motor skill domain the present investigation has incorporated three separate theoretical perspectives; Attribution Theory, the construct of Learned Helplessness and the Theory of Effectance Motivation.

The majority of attribution research concerned with the perceived causes of success and failure has utilized Weiner, Frieze, Kukla, Reid, Rest and Rosenbaum's (1971) model which subsumes Heider's (1958) causal attributions of ability, effort, task difficulty and luck into a two dimensional taxonomy, in order to classify an individual's attributions for success and failure (Frieze and Weiner, 1971; Gibson, 1980; Kukla, 1970; Weiner, Heckhausen, Meyer and Cook, 1972). A small number of these studies have investigated the feasibility of utilizing this two dimensional

model to classify mentally retarded individuals' attributions. Horai and Guarnaccia (1975) found that educable mentally retarded individuals were able to make causal attributions for success and failure to the factors of ability, effort, task difficulty and luck. The subjects attributed failure to a lack of effort and bad luck, and ascribed success to ability. Such attributions have been described as quite characteristic of normal, high achieving individuals (Smith, 1977). A similar study conducted by Hoffman and Weiner (1978) also supported the notion that retarded individuals respond to causal ascriptions in a manner similar to normal subjects.

Recently, a substantial amount of research has given strong consideration to the possibility of the phenomenon of learned helplessness occurring in individuals who have encountered a large number of failure experiences in a particular situation. The construct of learned helplessness, first identified by Seligman and Maier (1967), is characterized by an individual experiencing a feeling of helplessness due to a series of events in which the individual has perceived him or herself to be lacking in control. Abramson, Seligman, and Teasdale (1978) in their "critique and reformulation" of Seligman's (1975) original theory utilized an attributional perspective to discuss the various effects this phenomenon has on humans. As a result of this extension by Abramson et al. (1978), various investigators (Dweck, 1975; Hiroto, 1974) have attempted to identify the causal factors which are associated with the development of learned helplessness.

The mentally retarded have recently been singled out as a susceptible population to the development of this helplessness phenomenon because of their history of failure (Floor and Rosen, 1975; Weisz, 1979). In an attempt to incorporate an attributional approach in identifying learned

helplessness, Gibson (1980) had educable mentally retarded boys make causal attributions for their success or failure at a motor task using Weiner et al.'s (1971) two dimensional model. Contradictory to the findings of Hoffman and Weiner (1978) and Horai and Guarnaccia (1975), Gibson's mentally retarded subjects attributed their successes to good luck and personal effort and their failures to a lack of ability. Attributions such as these are not only characteristic of low achievers (Smith, 1977) but also of individuals exhibiting the phenomenon of learned helplessness (Abramson et al., 1978).

Abramson et al. (1978) portray chronic learned helplessness (when the effects of helplessness are long-lived or recurrent) as resulting from attributing failure to stable factors such as ability. It would seem plausible that if mentally retarded children continually make attributions for performance characteristic of low achievers as Gibson (1980) has recounted, that they might develop tendencies towards chronic learned helplessness. Subsequent failure experiences would then serve only to compound the severity of the chronic helplessness. Similarly, if investigators such as Cromwell (1963) and Zigler (1971) are indeed correct in their description of the mentally retarded individual's inordinately high amount of failure experiences, this, along with the fact that they attribute these failures to stable factors such as ability, may contribute to the existence of a developmental trend in learned helplessness with respect to the mentally retarded child. Such a trend has been cited by Weisz (1979). The results of his study clearly indicated that of the educable mentally retarded children tested, matched on both MA and IQ, upper MA level children were clearly more helpless than the lower MA children.

The possibility of the existence of such a developmental trend has

important ramifications in considering the mentally retarded child's motor performance. A number of comparative studies (see Wall, 1978, p. 81) have indicated that the mentally retarded are deficient in a number of the component processes important to human motor performance. These deficiencies contribute to the fact that mentally retarded children experience a good deal more failure in attempting culturally normative, age appropriate tasks in the motor domain than normal children. As has already been discussed, such failures may contribute to the development of learned helplessness. Wall (1982) has suggested that:

> As children grow older, the band width of task demands expected of them in play and games situations changes in an exponential manner . . . once the child reaches school age, the task demands with which he or she must cope rapidly increase. Bouncing, catching, hitting and kicking balls are skills that are characterized by increases in spatial and temporal uncertainty that demand the use of prediction and other strategic behaviour (p. 260).

One result of the tremendous push towards the integration of mentally retarded children into regular schools is that these children are now playing in the same school yards, and in many cases taking part in the same physical education classes as "normal" children. As the games the majority of children play become more complex, the mentally retarded child would appear to become less and less capable of successfully partaking in them. Thus, it would appear that over the course of development these children must experience progressively greater amounts of failure in the motor domain. Intuitively, one could conclude then that any learned helplessness exhibited at a young age would continue to develop in severity as the child grows older, especially if one considers along with the progressively increasing numbers of failures, the added pressure of failing amongst one's peers. A supposition such as this merits further investigation.

The construct of effectance motivation (Harter, 1978; White, 1959)

may provide further information as to the differential effects success and failure have on the mentally retarded child. In general, effectance motivation compels a child to engage in mastery attempts. Whether these attempts are successful or not strongly determines the child's own perceptions of his or her competence as well as the extent to which the child engages in further mastery attempts. Harter (1978) postulated that success experiences tend to result in high perceived competence and an increase in effectance motivation, while a number of failures results in low perceived competence and a decrease in effectance motivation.

In describing the concept of perceived competence Harter (1978) suggested that an individual may have different perceptions of competence with respect to distinct domains of performance. To this end she introduced the three competence domains of cognitive, social and physical. In order to operationalize her component oriented construct, Harter (1982) developed The Perceived Competence Scale for Children which taxes not only the three aforementioned domains, but as well includes a fourth general self-esteem scale. Harter found this Perceived Competence Scale to be effective in dealing with children ages nine through fifteen.

The fact that the mentally retarded experience a great amount of failure would, according to Harter's (1978) model, tend to contribute to their exhibiting low perceived competence. This low perceived competence in turn would in most cases lead to a decrease in effectance motivation. Such a trend as this can be compared to the development of the phenomenon of learned helplessness which has been found to occur in mentally retarded children (Gibson, 1981; Wiesz, 1979, 1981). Both low effectance motivation and learned helplessness may tend to contribute to a decrease in the motivation to perform.

As is illustrated through the four subscales within The Perceived

Competence Scale for Children, children quite often have different perceptions of competence for different domains of performance. Given that the mentally retarded, in general, experience a greater amount of failure than "normal" children, they also may in turn exhibit lower perceived competence across most domains. With specific regard to the physical domain, the fact that these children must perform in a "normal" atmosphere due to mainstreaming, though they are a great deal of the time less skilled, should lead us to suspect that they experience more failure in this domain than other children. Thus, similar to the development of learned helplessness, mentally retarded children may develop characteristics of low perceived competence in the physical domain.

It is possible that a similar developmental trend exists in mentally retarded children with respect to perceived competence as is hypothesized to occur with regard to learned helplessness. Continuous failure experiences in the various performance domains during a child's development may serve to consistently reinforce the child's perception of a lack of competence. If, as has been suggested by previous studies (Cromwell, 1963; Zigler, 1971), mentally retarded individuals do continue to experience failures during the course of their childhood, these perceptions of a lack of competence may increase just as the effects of learned helplessness are proposed to increase during these developmental years. It was with these notions in mind that the present study was undertaken.

STATEMENT OF THE PROBLEM

The purpose of this study was to investigate the attributions made by three age levels of educable mentally retarded boys for their success or failure at a gross motor task and to establish the nature of these same boys' perceptions of competence in four different domains. To this end

the following problems were devised:

1. Do educable mentally retarded boys make attributions characteristic of learned helpless individuals?
2. Do the older educable mentally retarded boys demonstrate a greater tendency to make attributions characteristic of learned helpless individuals than the younger boys?
3. Do the educable mentally retarded boys demonstrate lower scores on the Perceived Competence Scale for Children than "normal" children tested by Harter (1982)?
4. Do the older educable mentally retarded boys exhibit lower Perceived Competence Scale scores on all subscales as compared to the younger boys?

A major intent of this study was to replicate the findings of Gibson (1980) which found educable mentally retarded boys to exhibit attributions characteristic of low achievers (Smith, 1977) and/or learned helpless individuals (Abramson et al., 1978). As an extension of Gibson's work this study investigated the possibility of a developmental trend in learned helplessness with respect to this mentally retarded population. In addition, a subproblem of this study was to employ the use of a four point subjective questionnaire to gain further information as to the reasons for the attributions made by the boys.

The construct of perceived competence remains in the infant stage of development with respect to the amount of supportive research which has been conducted. The two problems cited with regard to the relationship between this construct and educable mentally retarded boys are thus very exploratory in nature. The following operational definitions will help to clarify some terms of reference.

OPERATIONAL DEFINITIONS

Educable Mentally Retarded

For the purpose of this study, the boys were classified as educable mentally retarded in the event their IQ's fell between 65 and 80. This classification was in keeping with the Edmonton Separate School System's EMR classroom range.

Learned Helplessness

Individuals were identified as displaying tendencies towards learned helplessness in the event that they attributed success primarily to effort and luck, and failure to a lack of ability (Abramson et al., 1978; Gibson, 1980).

Perceived Competence

The perceived competence of each boy with respect to the cognitive, social and physical domains as well as general self-esteem was determined from their scores on the four corresponding subscales within The Perceived Competence Scale for Children.

HYPOTHESES

Learned Helplessness

Hypothesis 1. The educable mentally retarded boys will demonstrate attributions for success and failure similar to the educable mentally retarded boys in Gibson's (1980) study, attributions which have been described as characteristic of learned helplessness.

Hypothesis 2. A developmental trend will occur in that the older boys will exhibit greater tendencies to make attributions characteristic of helpless individuals than the younger boys in this study.

Perceived Competence

Hypothesis 3. The scores of the educable mentally retarded boys on

The Perceived Competence Scale for Children will be significantly lower than the scores of "normal" children of similar ages in Harter's (1982) study.

Hypothesis 4. A developmental trend will be exhibited in the Perceived Competence Scale scores for the educable mentally retarded boys in that the older boys will have lower perceived competence scores across all scales as compared to the younger boys.

DELIMITATIONS

Subjects in the study were educable mentally retarded boys ages nine, eleven and thirteen selected from nine schools within the Edmonton Separate School System. The boys within each age group were randomly assigned to either a success or failure condition. Each subject was tested by the same experimentor on an individual basis in a private room within their own school. The testing took place over a period of one month.

Subjects were required to complete The Perceived Competence Scale for Children, execute a ball rolling task, and answer a number of subjective questions in one single session.

CHAPTER II

A SELECTED REVIEW OF RELATED LITERATURE

This selected review of literature can be partitioned into four research areas. The first section contains a historical introduction of attribution theory which considers three prominent approaches to this theory. Secondly, is a consideration of the link between causal attributions and achievement motivation. This section provides a thorough analysis of Bernard Weiner's model, An Attributional Theory of Motivation. An analysis of the theory of Learned Helplessness makes up the body of research considered in the third section. Of particular interest is the consideration this section gives to mentally retarded children and the development of Learned Helplessness. The fourth and final section introduces the concept of Effectance Motivation and relates it specifically to the construct of Perceived Competence.

THE DEVELOPMENT OF ATTRIBUTION THEORY

Man, in his infinite curiosity, strives to understand and interpret the various actions of individuals around him. Over the past forty years, social psychologists have striven to understand these causal inferences made by all individuals. The area of social psychology in which such investigators can be grouped is that of Attribution Theory. Attribution theorists concern themselves with the perceived reasons for a particular event's occurrence. There is no unified body of knowledge that neatly fits one specific attribution theory; there are many types of attribution theories and theorists. Nevertheless, there is a common interest which steers most investigators in this area (Heider, 1958; Jones and Davis, 1965; Kelley, 1967; Weiner, 1974).

Attribution theory was not originally formulated as a theory of individual motivation. It was in fact, originated as a theory which "described the process by which the individual makes attributions about his world-attributions of causes, dispositions, and inherent properties" (Kelley, 1967, p. 192). However as Kelley (1967) later points out: "A major application of the theory concerns the processes by which the typical observer infers a person's motivations from his actions" (p. 193). It is evident that attributional concepts are most important when perceivers try to identify the behaviour they are observing and eventually to predict what future actions may occur (Gibson, 1980).

Weiner (1980) in discussing the programs of research which have emerged from the analysis of perceived causality describes the questions attribution theorists are likely to ask:

a) What are the perceived causes of this event?

b) What information influenced this causal inference?

c) What are the consequences of the causal ascription? (p. 280)

It is the intent of this section to review literature which has sought to investigate and understand these questions.

Heider's Common Sense Psychology

Fritz Heider can be considered the "Grandfather" of attribution theory. Heider, however, considers his work to be an "investigation of common sense psychology" (Heider, 1958, p. 79). He describes his theory as such because of its ability to guide our behaviour towards other people and because of the inherent truths it contains. Heider (1958) considered language as a conceptual tool to be used: "The fact that we are able to describe ourselves and other people in everyday language means that it embodies much of what we have called naive psychology" (p. 7). This language, which is taken from the common

vernacular, uses words such as "give", "take", "can", and "may", to establish the foundation of Heider's conceptual analysis. Heider (1958) states that his goal is "to clarify some of the basic concepts that are most frequently encountered in an analysis of naive description of behaviour" (p. 14).

Heider's naive attribution theory was strongly influenced by Gestalt psychology, particularly Kurt Lewin. Heider (1958) notes:

> Lewin's field-theoretical approach known as topology (Lewin, 1936, 1938) has been in the background of much of the thinking in the present theory of interpersonal relations. Though not many of the specific concepts of topology have been taken over, they have helped in the construction of new ones with which we have tried to represent some of the basic facts of human relations (p. 4).

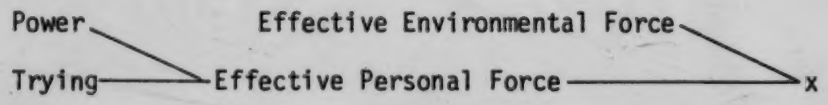
Heider (1958) proposed that the result of any action depends on two sets of conditions, namely factors within the person and factors within the environment. These conditions may be considered forces, that is, the effective force (ff) of the person or of the environment, when referring to the totality of forces emanating from one or the other source. The relationship of these forces (ff) to the action outcome (x) is depicted by Heider (1958, p. 82) as:

$$x = f(ff\ person, ff\ environment)$$

It is important to remember here that Heider is referring to the perceived causes of the behaviour (action outcome) and not to the determinants of force actually acting upon the person or influencing an outcome (Weiner, 1980).

The effective personal force, in turn, is analyzed into two different factors: power and motivation. In describing these two factors Heider suggests that power is often represented by ability though there are other personal characteristics that effect power, such as temperament. The motivational factor suggests what a person is trying to do and how

hard he is trying to do it. Heider (1958, p. 83) represents these two factors in the following schema:



or,

$$x = f(\text{trying, power, environment})$$

Power and trying are said to relate as a multiplicative combination, as the effective personal force is zero if either of them is zero.

Heider (1958) regroups these three determinants of action (power, motivation, and effective environment) in order to distinguish between ability and effort.

> Whether a person tries to do something and whether he has the requisite abilities to accomplish it are so significantly different in the affairs of everyday life that naive psychology has demarcated those factors still further by regrouping the constituents of action in such a way that the power factor and the effective environmental force are combined into the concept "can", leaving the motivational factor clearly separate and distinct (p. 83).

The Concept of Can

"Can" is generally considered to be a dispositional concept. By dispositional, Heider intimates that there is a relatively stable relationship which exists between the person and the environment. Implied in this concept is an ability, whether physical or mental which as Heider (1958) suggests exists "in absence of imposing restraining environmental forces, or imposing restraining forces smaller than one's own power" (p. 85).

The Concept of Trying

The distinction between can and try is related to the distinction between learning and motivation in scientific psychology. There are

two aspects within this concept of trying. The first aspect is usually called intention and the second exertion. Heider describes the former as directional and the latter as the quantitative aspect. They are often thought of as the direction and strength of motivation which together make up the "vectoral component of action" (Heider, 1958, p. 110). Intention, whatever its source, gives the concept of trying the characteristic feature of personal causality. Exertion, however, varies directly with the difficulty of the task and inversely with the power (ability) of the person, that is, the greater the individual ability, the less exertion needed. It must also be recognized that the reverse holds true.

The effective environmental force, Heider's second condition of action is thought to consist of two factors: task difficulty and luck.

Difficulty

Considered to be an important dispositional property of the environment by Heider, task difficulty is often gauged by exertion. The temptation to judge a task as "easy" because of the effortlessness with which a skilled individual performs is often only contained by rational knowledge of specific skill requirements. Realistic attributions for task difficulty reside in analyzing group performance. Often, the success or failure of an action provides the raw material for the perception of "can". Successful completion implies the person "can" do the task. The decision on whether his success was due to power (ability) or to the ease of the task is made by how others have done on the task. If he is the only one of the group to succeed, an attribution of ability will be made. An environmental attribution of difficulty will occur however, if all individuals in the group succeed.

Consider Heider's (1958) example of a child baking a cake:

> If a child, for example, successfully bakes a cake or reads a book, we conclude that the recipe or book was easy. In effect we have made use of the postulates linking can with power and environmental difficulty:
> (1) Since success has occurred, the task difficulty must be smaller than the ability.
> (2) Since a child has effected the success, we presume that the ability is low.
> (3) Therefore, we conclude that the task is easy and that most adults would be able to accomplish it (p. 90).

Opportunity and Luck

These two terms are usually used to connote the more variable factors within the environment. It is important to identify these temporary conditions which may disturb the more permanent coordination between outcome and the dispositional properties of the task and person. In doing so man is able to establish himself in a stable world in which the future can be anticipated and controlled.

Heider (1958) indicates that in the event the environment fluctuates, the person can wait until the effects are most beneficial, that is, for the best opportunity. Similarly, success may be inferred when the resultant environmental force in the direction of the goal is at maximum, or when the force away from it is at a minimum.

There are a diversity of conditions that lead to the cognition of luck. One of these is the consistency versus the variability of performance (Heider, 1958).

> If a person succeeds only once in a great number of trials we will attribute the success to luck, especially if it is followed by a number of failures so it cannot be interpreted as "He has learned it at last". If he fails only once and succeeds at other times, the failure is attributed to bad luck (p. 91).

Another important determinant of attributions made to luck is the individual's ability. For example, if an individual is perceived to have tremendous ability in a certain sport, any failure by that individual

would most surely be attributed to bad luck. There are other factors which may contribute to the judgment of luck, however these too serve to underline the significance of such temporary environmental states. Heider (1958) summarizes their significance in relation to the more dispositional properties of the environment: "The important point is that correct attribution, whether to stable or to the vacillating conditions underlying an event, always serves to build up and support the constancy of our picture of the world" (p. 92).

Heider's analysis of action permits man to give meaning to action. As can be seen, such analysis leads to the influencing of the actions of others as well as man himself and to predict future actions. In essence, the general features of the causal network are according to Heider internalized and mastered. These features form the content of the cognitive matrix that underlies each individual's interpretation of human behaviour.

The Correspondent Inference Theory of Jones and Davis

The analysis of social influence has led indirectly to the problem of perceiving the causes of another person's behaviour. Jones and Davis (1965) have directly attacked this central problem by employing Heider's attributional principles to analyze the process of inferring another person's intentions from his actions. Jones and Davis (1965) cite that their purpose is: ". . . to construct a theory which systematically accounts for a perceiver's inferences about what an actor was trying to achieve by a particular action" (p. 222). The significance of this action is derived from considering alternative actions to the actor which have been forgone.

Simply put, correspondence refers to the extent that the act and

the underlying characteristic or attribute are similarly described by the inference. The basic principle underlying the Jones and Davis analysis is firstly an assumption that the observer believes the actor "was aware his actions would have the observed effects" (Jones and Davis, 1965, p. 220) and has the "ability to bring about the effects observed" (Jones and Davis, 1965, p. 221). In other words, the effects may not be considered accidental. It is necessary for the perceiver to consider knowledge and ability, be it via actual information or simply his own assumption, before an assignment of intentions can be made. Each plays a similar role in enabling the perceiver to decide whether an effect or consequence of action was accidental. In turn the assignment of intentions "is a precondition for inferences concerning those underlying stable characteristics toward which the perceiver presses in attaching significance to action" (Jones and Davis, 1965, p. 222). Jones and Davis have summarized this entire inference process in what they have called the "action-attribute paradigm", shown in Figure 1.

Figure 1 deleted due to
copyright laws

This paradigm which reflects Jones' and Davis' description of a corresponding inference traces the course of the perceiver's inference from the observed effects of the action to the inferred disposition that the action is presumed to reflect. As was mentioned earlier, it is not

necessary for the perceiver to have actually witnessed the effects as long as he has them described to him by an actual observer. The term corresponding inference refers to the fact that the effects and the attributions or intentions of the actor may be described in similar terms. Kelley (1967) describes the central hypothesis for this inference:

> The central hypothesis is that a correspondent inference will be made to the degree (a) there are some but few effects of the action that are unique (noncommon) to it as compared with others' alternative actions available to the actor, and (b) these effects are low in assumed social desirability (p. 208).

In essence, the fewer distinct reasons a person might have for a particular action and the less these reasons are widely shared by others the more the action itself informs the perceiver about the characteristics of the actor.

Jones and Davis cite two manifestations of the perceiver's personal involvement. Firstly, the action observed may have positive and negative consequences for the perceiver. This, they describe as "hedonic relevancy". Secondly, when the perceiver believes that the action he has observed has been uniquely conditioned by his presence, Jones and Davis describe the variable of personalism as existing. A simple description is given by Jones and Davis (1965) in their conclusions:

> An action is personalistic in the perceiver's view, if it was uniquely conditioned by the latter's presence: if conditions are such that the perceiver believes he is the intended consumer of the effects produced by the actor (p. 264).

When an action is hedonically relevant, a personalistic attribution is likely to be even more extreme.

The Attribution Theory of H.H. Kelley

The work of Kelley (1967, 1971, 1972), similar to that of Jones and Davis (1965), is derived from the work of Fritz Heider. Kelley (1967) defines attribution as the process of inferring or perceiving the

dispositional properties of entities in the environment. This theory is parallel to Heider's (1958) in that individuals in considering these dispositional properties must choose between internal and external attributions. Kelley (1967) gives the example of a person's enjoyment of a movie. The individual must determine whether this enjoyment is attributed to the movie (it is intrinsically enjoyable) or to himself (he has a specific kind of desire relevant to the movie).

The central theme of Kelley's attribution theory is the principle of covariation between potential causes and effects. This basic notion of covariation, derived from J.S. Mills' method of differences, is used to examine variations in entities, persons, time, and modalities. More simply put, in any attribution there will be a stimulus, a perceiver and a context (a combination of the time and the modality).

Kelley's work, often considered a theory of external attributions, introduces three criteria which must be met in order for an attribution to be made to an external thing (environment) rather than to self (person). The individual, Kelley said, must respond <u>differentially</u> to the thing, <u>consistently</u> over time and modality, and in agreement with a <u>consensus</u> of other persons' responses. It is important to remember that none of these attributional criteria have to be met perfectly in order to have a stable attribution. Shaver (1975) observes that:

> My reaction to the ocean sunset does not have to be identical in every situation, nor through every modality, and complete agreement among observers is almost never achieved. The general principle of covariation still applies: the attribution of an effect will be made to a dimension along which there is variation (distinctiveness), rather than to a dimension along which there is little or no variation (consistency, consensus) (p. 52).

Kelley (1967) has defined four criteria for external validity. Through these criteria the person is able to ascertain that the attributions or impressions reflect the properties of the entity and not his own

characteristics. The criteria are:

1. Distinctiveness: the impression is attributed to the thing if it uniquely occurs when the thing is present and does not occur in its absence.
2. Consistency over time: each time the thing is present, the individual's reaction must be the same or nearly so.
3. Consistency over modality: his reaction must be consistent even though his mode of interaction with the thing varies. (For example, he sees it to have an irregular outline and he feels it to be rough; or first he estimates the answer to the problem and then he calculates it.)
4. Consensus: attributes of external origin are experienced the same way by all observers (p. 197).

The individual can thus judge the extent to which he has a true picture of the external world by the degree to which his attributions fit the above criteria.

Information Level

It cannot be assumed that because all four of Kelley's criterion are met that this results in unquestionable external validity. Specifically, this evidence is the basis for subjective validity but not necessarily for objective validity. Kelley suggests however, that the more information an individual possesses, the more likely he will be to make quick and accurate judgements, resulting in his taking "action with speed and vigor" (Kelley, 1967, p. 197).

Kelley intimates that an individual's information level can be indexed in terms of a) differentiation and b) stability of attributions (based on consistency and consensus). An individual (Kelley's person A) will be susceptible to influence the more variable are his prior attributions. In essence, an individual who exhibits unstable attributions, will corresondingly demonstrate a low information level which in turn will lead to a dependency on others (Kelley's person B) for information. Kelley (1967) discusses that attribution instability will be high for a person who has:

> (a) little social support, (b) prior information that is poor or ambiguous, (c) problems difficult beyond his capabilities, (d) views that have been disconfirmed because of their inappropriateness or non-verdicality and (e) other experiences engendering low self-confidence (p. 200).

Finally, Kelley suggests that like all cognitive systems, attribution processes are subject to error. Based on similar errors cited by Heider (1958), Kelley indicates that five common errors are: 1) ignoring the relevant situation, 2) egocentric assumptions made via incomplete evidence, 3) biasing of interpretations due to the magnitude of affective consequences, 4) cases where the surrounding situation may be misleading attributions made to the embedded figure, and 5) experimentors accidentally inducing their subjects to make attributional errors. Obviously there are other attributional biases which occur, some of which Kelley cites. These however, he found prominent in experimental literature in attribution theory.

SUMMARY

Three major theories of attribution have been discussed in this section. Heider's naive psychology of attribution is a formalization of the ways in which any layman might try to understand the behaviour of an actor. The work of Heider reflects one of the first systematic attempts at analyzing individuals' perceptions about the environment and the people in it. One of Heider's major contributions to this area of attribution theory is his identification of the personal factors of effect, ability, and intention in contrast with the environmental factors of luck and task difficulty.

The Theory of Correspondent Inference proposed by Jones and Davis (1965) represents a reflection of Heider's theory as well as an extension into the process of inferring another person's intentions from his actions.

In their theory Jones and Davis have attempted to develop a systematic account for the perceiver's inferences about what exactly an actor was attempting to achieve via his specific action. In essence their theory proposes that a systematic or out of role action is more informative than role prescribed behaviour.

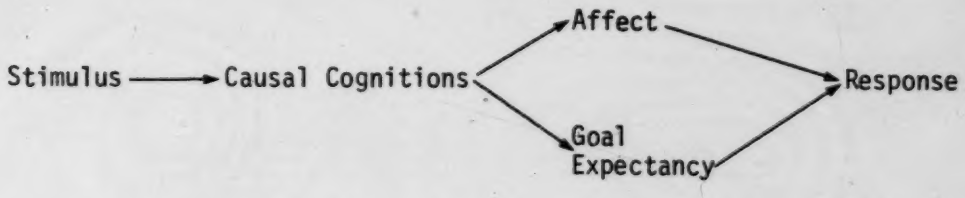
The third theory of attribution which has been considered is that of Kelley (1967, 1971, 1972). This theory can be viewed as one of External Attribution. Kelley presents the criteria for external validity as being differentiation, consistency (over time and modality), and consensus. Another key proposal within Kelley's theory is that the information level of an individual effects the nature of that person's inferences. The higher the information level, the more quickly and accurately an individual will be able to make an attribution. The three theories provide a sound theoretical basis for further analysis of attribution related literature because they are indeed the roots of the current approach to this area of social psychology.

AN ATTRIBUTIONAL THEORY OF BEHAVIOUR

The work of Heider (1958) ignited an interest by a number of attribution researchers in the link between causal attributions and achievement motivation. One can consider the basic paradigm of the cognitive theory of motivation as the underlying model for this attributional approach to motivation. The paradigm illustrated by Weiner, Heckhausen, Meyer, and Cook (1972, p. 239) infers that mental events, following the perception of a stimulus, determine the behaviour response of the stimulus:

Stimulus ⟶ Cognitive Activity ⟶ Response

Two distinct areas of research are reported by Weiner (1972) to have resulted from this paradigm. One area linked causal ascriptions to affective expression while the other related causal attributions to expectancy of success. Weiner et al. (1972) proposed that a general attributional model of action should thus incorporate the influence of causal ascriptions on both affect and expectancy. As a result, they suggested that the model assume the following form:



This hypothesized model implies that a stimulus arouses cognitions about the causes of a behaviour outcome. The cognitions determine affective responses and goal expectancies as well as subsequent behaviours.

As a result of Heider's (1958) initial work it has been postulated that there are four perceived causes of achievement outcomes (i.e., success and failure: ability (power), effort, task difficulty, and luck). Though it has been indicated that this is far from an exhaustive list (Frieze, 1973; Frieze and Weiner, 1971), it is contended that these four causal elements generalize to all achievement tasks, and account for the major sources of variance when considering the perceived causes of success and failure (Weiner et al., 1971).

A much more specific attributional model for achievement behaviour was introduced by Weiner (1972). This model, shown in Figure 2, separates the process into three distinct stages. In the task evaluation stage, an individual's perception of an achievement-related task causes attributions related to the potential causes of success and failure. This causal analysis determines both the expectancy of success and failure

Figure 2 deleted due to

copyright laws

and the affective anticipations. Stage 2 is characterized by goal expectancies and anticipatory emotions resulting in approach or avoidance behaviour and success or failure. Finally, the causal attributions are evaluated as a function of the achievement outcome and new information concerning the task is gained. The attributions made determine the achievement-related affects, as well as future expectancies of success at similar future tasks.

Causal Dimensions

As has been discussed, there are numerous possible perceived causes of success and failure. Because of the diversity of the list of causes, it has been deemed essential to create a classification scheme or a taxonomy of causes (Weiner, 1980). In so doing, it is possible to delineate their similarities and differences and identify their underlying properties.

Rotter (1966) introduced the first systematic examination of individual differences in causal attributions. In his Social Learning Theory, he described a basic theory of motivation which characterized an individual's behaviour potential as being a function of both the expectancy of the goal and the reinforcement value of that goal. The behaviour demonstrated may not always be equally influenced by these two functions. More importantly, the eventual behaviour is determined by the relative importance placed upon the two causal inferences.

As a result of this theory of motivation, Rotter proposed a one dimensional classification scheme of control. This scheme consists of control derived from within (internal) or outside (external) the individual. Rotter's (1966) one dimensional model can best be understood through his definition of Locus of Control (LC) as follows:

> When a reinforcement is perceived by the subject as following some action of his own not being entirely contingent upon his action, then, in our culture, it is typically perceived as a result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the focus surrounding him. When the event is interpreted in this way by the individual we have labelled this a belief in external control. If the person perceived that the event is contingent upon his own behaviour or his own relatively permanent characteristics, we have termed this a belief in internal control (p. 11).

In discussing the above classification in relation to specific individuals rather than situations, Rotter describes external people as being receptive to reinforcement, believing outcomes to be beyond their control and internals as individuals believing they exert control over the outcomes of actions and therefore resistant to external reinforcement.

A two dimensional taxonomy was introduced by Weiner et al. (1971) because of a number of limitations they perceived in Rotter's (1966) one dimensional model. The two causal dimensions introduced were that of locus of control (internal or external) and stability (fixed or variable). Figure 3 illustrates that within the control dimension, ability and effort are classified as internal dimensions of action, or as Heider states, personal face. Task difficulty and luck are classified as external determinants of success and failure. The second dimension, stability, has been described as characterizing causes on a continuum from stable (invariant) to unstable (variant) (Weiner, 1980). Ability and task difficulty are said to be perceived as relatively fixed, while luck and effort are more unstable - luck implying random variability; effort being either augmented or decreased from one episode to the next. In summary, Weiner et al. (1971) postulated that ability is an internal, fixed factor; effort an internal, variable factor; task difficulty an external, fixed factor; and luck an external, variable factor.

A number of deficiencies were recognized to exist in the two

Figure 3 deleted due to

copyright laws

dimensional classification scheme (see Weiner, 1974, p. 6). To overcome some of these conceptual difficulties Rosenbaum (1972) proposed a three dimensional taxonomy of achievement related causes. The third dimension was labelled by Rosenbaum as "intentionality". Recently Weiner (1980), in discussing causal dimensions, deemed that this third causal dimension should be more appropriately titled "controllability". Causes such as effort are likely to be perceived as controllable whereas ability and task difficulty are not subject to volitional control. It is important to note that this dimension is not clearly distinct from the locus and stability dimensions of causality. Weiner (1980) makes the supposition that:

> . . . if a cause is both internal and unstable, such as ability, then it must be uncontrollable. However, some causes, such as mood and fatigue, are internal and unstable but not under volitional control, whereas effort is likewise internal and unstable, but controllable. Hence, it seems reasonable to distinguish this third dimension of causality (p. 346).

Admittedly, the more recent introduction of intentionality into the model created some difficulties, inasmuch as the dimensions of causality no longer appear to be orthogonal. Weiner (1980) indicates that a differentiation between intentionality and controllability must be made.

One may intend on a certain behaviour, but suddenly appear to lose control. For example, "I intended not to drink, but I can't seem to control my behaviour". As well, intentionality, but not controllability, implies a desire or want. Weiner (1974) described how Rosenbaum's model had opened up many new issues, but in turn introduced a number of complex issues quite unexplainable at the time. Six years later, Weiner (1980) has attempted to reexplain this third dimension more clearly, but, as well has admitted the difficulties of honing down the complex nature of this third dimension.

Figure 4 illustrates the interaction of the causes discussed with the three dimensions of locus, stability, and controllability. It is demonstrated, for example, that both ability and effort may be perceived as stable or unstable (there are temporary fluctuations in ability as well as effort). Additionally, external factors, such as other people may affect one's achievements. Figure 4 also indicates that to distinguish ability and effort on the grounds that one is stable but the other is not is insufficient. This distinction disregards the fact that ability is not subject to volitional control, while effort is considered to be controllable.

Figure 4 deleted due to

copyright laws

Subsequent research to this three dimensional model was conducted to catalogue the perceived causes of success and failure. Frieze (1973) in two separate experiments was able to categorize 86 percent of college students' reasons for unacademic and academic failures into nine distinct causal categories. Listed in order of their frequency of usage, the categories were ability, immediate effort, task difficulty, luck, something about other people (such as teacher bias), mood, stable effort expenditure, fatigue, and unclassifiable causes. It was concluded by Frieze that the intuitions of Heider on achievement causes were well supported.

Recently, Frieze and Snyder (1980) attempted to discern what causal explanations children use to explain success and failure; whether their attributions were indeed different than those made by adults. Children from the first, third, and fifth grade levels were interviewed to determine what they saw as probable causes for success and failure in four situations: a school testing situation, doing well or poorly in an art project for the classroom, playing football, and catching frogs. The results of this study led the authors to two very important conclusions. Firstly it was found that the major causes used by most children to explain testing outcomes had an internal locus of control. The authors concluded from this that testing situations must have a very powerful impact on the individual child in turn affecting his or her self-esteem positively or negatively depending upon the test results. Secondly, and of tremendous importance to this study, the data also indicated that the child's causal belief structure is situationally specific. Testing situations, for example, are viewed very differently than other achievement situations in school. This finding of Frieze and Snyder's (1980) is similar to the component model of effectance motivation proposed by

Harter (1978). All children do not have similar experiences in the physical domain. These dissimilar experiences may lead to very different causal attributions for success and failure by different children. Harter's (1978) approach to this topic will be considered later.

The tentative list of causes (Frieze, 1971) and three dimensional taxonomy (Rosenbaum, 1972; Weiner, 1980) resulted in attribution researchers looking in what Weiner (1974) describes as two research directions: ". . . backwards to the information, processes and structures that influence causal decisions and forward to the effects of causal judgements on future behaviour" (p. 8). Born out of these three distinct concerns is Weiner's (1974) Attributional Model of Achievement Behaviour, a model which remains relatively intact today.

AN ATTRIBUTIONAL THEORY OF MOTIVATION

The model which appears in Figure 5 illustrates the process of an individual's causal attributions for success and failure from the initial antecedent cues to the final behavioural consequences. In order to reach causal inferences, to decide why one has succeeded or failed, various sources of information must be utilized and combined (Weiner, 1972). Some of this information may be extracted from current situations, while other evidence is gleaned from memories of past events. These antecedent cues include such information as: past outcomes, social norms, performance peak, patterns of performance, persistence, task characteristics, causal schemata, individual difference characteristics and achievement related needs (Weiner, 1980).

The causal antecedents illustrated in Weiner's model subsumed within the three dimensional taxonomy, provide cues for the determination of reasons for success or failure at a task. Research concerning causes

Figure 5 deleted due to

copyright laws

assigned for success and failure has identified two differing patterns of attributions given by individuals. The logical analysis pattern develops both Heider's (1958) naive analysis of action and Weiner et al.'s (1971) model. The second pattern, developed by researchers such as Feather and Simon (1971), Fitch (1970) and Frieze and Weiner (1971) is described as the defensive and self-enhancing analysis.

The basic tenet of the logical analysis is that individuals will draw logical conclusions about causality given the appropriate information. It is assumed that all individuals apply and perceive themselves as applying moderately consistent and high effort on a task (Nicholls, 1975). In developing this logical analysis the problem identified is to predict attributions to ability, effort and luck, as task difficulty is assumed to be the same for all individuals.

The second pattern, identified as defensive or self-enhancing is seen to result in greater attributions of success to internal factors (effort and ability) and failure to external factors (task difficulty and luck).

Consistencies occur between the two opinions in achievement literature in that both identify internal factors (ability and effort) as more likely attributions for success than for failure (Kukla, 1970; Lubinbuhl, Crowe, and Kahan, 1975).

Weiner's model further specifies that the attributions made to one or more of these causal factors will influence the future expectancy of success and the effective consequences of achievement performance. Research with regard to expectancy of success has pondered the influences of both locus of control and the stability dimension.

Weiner (1978) in discussing this problematic controversy states that:

Research findings indicate that ability and task difficulty (factors)

> respectively classified as internal and external in locus of control) are both perceived as causes of personally consistent events, whereas effort and luck (also respectively classified as internal and external in control) are both perceived as causes of inconsistent events. It is therefore suggested that the increased expectancy of success following a positive outcome (i.e., the anticipation of consistent outcomes), results from attributions to what might be labelled as stable elements (high ability and/or an easy task), regardless of the locus of control of the causal attribution. Conversely, relatively smaller increments or actual decrements in the expectancy of success after goal attainment (i.e., the anticipation of inconsistent outcomes) may result from attributions to what might be labelled as unstable elements (unusual effort and/or good luck), regardless of locus of control of the causal factor (p. 80).

Indeed research (McMahan, 1973; Weiner, Nierenberg and Goldstein, 1976) has born out this statement. All of the studies cited found that while attributions to stable elements augmented typical expectancy shifts, attributions to unstable elements reduced the magnitude of typical expectancy changes.

Weiner's model clearly explains changes in expectancy of success or failure via the stability dimension. With regard to the expectancy of success, it has been shown that ascription of an outcome to a stable factor such as ability increases expectancy of success after a success and decreases expectancy of success after failure more than does an ascription to an unstable cause, such as luck. Similarly, attributing failure to task difficulty, a stable factor, results in low expectancy for success on that task in the future. On the other hand, if failure is attributed to an unstable factor such as lack of effort, the expectation of being able to succeed on that task in the future is quite high, as effort is an unstable factor and the individual will reason that provided more effort is made, success is possible. Of critical importance in the formulation of these attributions is the individual's background and past experience.

In addition to influencing expectancy of success, Weiner's model

also indicates that causal attributions in part determine the affective consequences of success and failure. Figure 6 illustrates the hypothesized relationship between causal attribution for success and failure and the magnitude of achievement related affects of pride and shame. Feelings such as pride and shame are maximized when success and failure are attributed to external causes. In a smiliar manner, failure perceived as caused by low ability or lack of effort results in greater shame and external punishment than failure that is attributed to excessive difficulty of the task or bad luck. In addition, Figure 6 demonstrates that causal attributions to effort, an internal cause under volitional control, maximize positive and negative affects for success and failure. Weiner (1974) simplifies this relationship:

> Concrete examples of the relationship are readily available. For example, it is reasonable to presume that one feels great pride when he or she succeeds at a task that no one else can perform. In a similar manner, shame appears to be maximized given failure at a task that all others can accomplish. . . . Performance consistent with social norms elicits external (task) ascriptions, while performance inconsistent with the norms results in personal attributions. Thus, if success is experienced when no one else succeeds, or if one fails at a task that all others can complete, then the respective success and failure will be ascribed internally (p. 32).

Empirical evidence has supported this position that perceived locus of causality influences emotional responsiveness. Feather (1967) induced success or failure at matching tasks and had subjects report the "attractiveness" of success and the "repulsiveness" of failure. As well, the outcome of the matching task was described as determined by either skill or luck. Feather found the greater likelihood that success and failure are ascribed internally the higher the attractiveness and repulsiveness ratings. These results are supported by the similar findings of Lanzetta and Hannah (1969) and Weiner and Kukla (1970).

The final phase in Weiner's model is the behavioural consequences

Figure 6 deleted due to

copyright laws

of causal attributions made. Of interest to this study is the influence that causal effects such as expectancy shifts and affect reaction have on performance. There is systematic evidence that behaviours associated with high and low achievement needs are mediated by causal ascriptions for success and failure. Weiner (1974) distinguished between people with high and low achievement needs:

> Persons high in achievement needs initiate achievement activities, work with heightened intensity at those tasks and persist in the face of failure. On the other hand, persons low in achievement needs avoid undertaking tasks, work with relatively little intensity, and quit when they are failing (p. 37).

In relating this concept of achievement needs to the attributional framework, a number of studies (Kukla, 1972; Weiner and Kukla, 1970; Weiner and Potepan, 1970) have indicated that individuals with high achievement needs are more likely to attribute success to ability and effort and failure to bad luck. This attributional bias results in what Dweck and Reppucci (1973) refer to as the maintenance of "hope"

and a continuation of striving to achieve goals following failure. Low achievers do not appear to offer straight forward reasons for success. They tend to attribute success to the external causes of good luck or the ease of the task. As a result of not attributing success to personal causes such as ability, low achievers are characterized as displaying very little pride for personal success. Unfortunately, low achievers are very sure of their reasons for failure. A consistent pattern of attributing failure to a lack of ability has been witnessed in this population.

Smith (1977) has illustrated the relationship between causal attributions and performance. Figure 7 displays the differential effects that success and failure have on persons with high achievement needs versus persons with low achievement needs. Continual success and/or failure in performance will tend to reinforce the level of self-esteem and consequently will also be reflected in the level of achievement motivation of the individual displayed on future occasions.

Two further contributions to the individual's level of achievement motivation are outlined by Smith (1977). The first of these is task structure. It is Smith's belief that a child, in considering a specific task confronting him or her, will view it as a skill task, a chance task, or some combination of the two. In defining it a chance task, the child is actually acknowledging that events contributing to the completion of the task are externally determined. Described in terms of the attributional causes, this task would probably be identified as dependent on luck or some mysterious uncontrollable conditions. A skill task, on the other hand, would be defined as internally dependent, and thus would be associated with effort and/or ability attributions.

The second form of analysis by which an individual, as described

Figure 7 deleted due to

copyright laws

by Smith (1977), is able to perceive a task in an achievement situation is via assessment of task difficulty. Smith (1977) describes this contribution to individual achievement motivation as quite subjective:

> How hard or easy a task is should be answered from the point of view of the individual learner. Not only is task difficulty subjectively defined by each learner, but it varies with both social and physical factors. . . . Individual assessments of task difficulty are highly ideosyncratic (p. 13).

It has been demonstrated by various researchers (Trope, 1975; Weiner, 1974) that tasks which an individual feels he or she has a 50/50 chance of completing arouse the greatest level of motivation. These intermediate level tasks are also described as arousing the greatest emotional or affective reaction and provide maximum feedback about capability and means to improve performance. Obviously failure at a very hard task or success at an extremely easy task proves an individual with little or no useful information. Harter (1978) discussed this same ratio as being optimal for the development of effectance motivation and perceived competence. Relating this concept to individual achievement, investigations have shown (Weiner et al., 1972) that high achievers will choose this intermediate level of difficulty whereas low achievers will opt for the task considered to be at either end of the spectrum (i.e., very easily performed tasks or tasks completely beyond their capabilities). In choosing these two extremes the subject with low achievement needs will either surely succeed or will be able to blame his or her failure upon the difficulty of the task.

Another method of evaluating task difficulty is described by Smith (1977) in terms of a comparison of the individual to others around him or her. Success by a child, when the majority of others are failing will result in an attribution of high ability. Conversely if that child experiences failure while the rest are succeeding he or she may tend to

attribute this to a lack of ability. The more this child experiences failure, the more he or she will become used to this attribution of lack of ability and eventually this may lead to an immediate acceptance of this attribution for failure.

SUMMARY

Consideration has been given to the perceived causes of success and failure and how these causes in turn differentially affect expectancies and affective reactions. These considerations are of particular importance when relating the concept of achievement motivation to the target population of this study, the mentally retarded child. The attributional theory of motivation, as a result of its concerns with success and failure situations, has spawned research in a relatively new area of investigation, the phenomenon of learned helplessness. The following section will review the most recent literature related to both of these areas while paying particular attention to their influences on research with respect to the mentally retarded.

THE THEORY OF LEARNED HELPLESSNESS

The Origins of Learned Helplessness

The last few decades have witnessed the emergence and subsequent development of the psychological theory of learned helplessness. The origins of this theory can be traced however to as early as 1957 in C.P. Richter's physiological study on the differences in responses to stress between wild and domesticated Norway rats. Richter found that rats which had their whiskers snipped responded by swimming to the bottom of the swim tank they were being tested in, and subsequently drowned. After extensive replication, Richter concluded that the cutting of whiskers resulted in a loss of contact with the outside world. This loss was

apparently disturbing enough to cause their deaths.

Overmier and Seligman (1967) may be credited with the pioneer study in learned helplessness research. In conducting Pavlovian experiments with dogs, Overmier and Seligman encountered the situation where the dogs, exposed to inescapable shock would simply give up trying to rid themselves of the painful shock and cower. Further experimentation by Seligman and Maier (1967), and Seligman, Maier and Geer (1968) resulted in similar findings. This original animal research led eventually to Seligman (1975) formulating the Theory of Learned Helplessness. In his formulation, Seligman (1975) provides a very simple description of this phenomenon: "A person or animal is helpless with respect to some outcome when the outcome occurs independently of all his voluntary responses" (p. 17). Seligman goes on to discuss that when a human is faced with a noxious event (similar to the uncontrollable shock given to the dogs) which he cannot control, his motivation to respond is drastically undermined.

The first published account of learned helplessness in humans (Thorton and Jacobs, 1971) was seen to have methodological problems. Specifically, there appeared to be a confounding between the instructional set and the inescapability in the pretreatment. Hiroto (1974) can be credited with one of the first successful learned helplessness experiments with humans. Hiroto reported that helplessness could be experimentally induced in man parallel to the manner in which it was in animals. Hiroto and Seligman (1975) replicated Hiroto's (1974) findings and in turn also reported that in treating a group of subjects with four insoluble discrimination problems, a debilitating effect occurred on solving later anagrams relative to a control and soluble pretreatment group. These findings marked the first demonstration of learned helplessness occurring

within a cognitive task without aversive unconditioned stimuli or instrumental components. As a result of their findings Hiroto and Seligman (1975) suggested that learned helplessness may involve a trait-like system of expectancies that responding is futile.

Three major consequences of experience with uncontrollable events are seen to occur in humans. Seligman (1975) defines these:

> The expectation that an outcome is independent of responding (1) reduces the motivation to control the outcome, (2) interferes with learning that responding controls the outcome; and if the outcome is traumatic, (3) produces fear for as long as the subject is uncertain of the uncontrollability of the outcome, and then produces depression (p. 55).

These consequences can be viewed as disturbances, that is, a motivational disturbance, a cognitive disturbance, and an emotional disturbance. Key to the concept of cognitive disturbance is the idea that learning that an outcome is independent of a response makes it more difficult to learn, later on, that responses produce that outcome. As was mentioned earlier, Hiroto and Seligman (1975) reported findings which fully agree with Seligman's (1975) hypothesis.

Abramson et al. (1978) proposed a reformulation of the Theory of Learned Helplessness based on a revision of attribution theory. These authors claimed that the original hypothesis of learned helplessness was formulated before a significant number of human studies were conducted. Two major problems were identified by Abramson et al. (1978) with the original hypothesis:

> (a) It does not distinguish between cases in which outcomes are uncontrollable for all people and cases in which they are uncontrollable only for some people (universal vs. personal helplessness) and (b) it does not explain when helplessness is general and when specific or when chronic and when acute (p. 49).

Universal helplessness is characterized by the belief that an outcome is independent of all one's own responses as well as responses of other

people. Personal helplessness, on the other hand, occurs when the individual believes that there exist responses that would contingently produce the desired outcome, although he or she does not possess them. It is important here that a distinction be made between failure and uncontrollability. The two must not be considered synonymous. Learned helplessness can result from success experiences which are judged to be resulting independent of the response. Failure may be considered a subset of learned helplessness, typically overlapping with personal learned helplessness. This distinction between personal and universal led the authors to introduce a fourth deficit caused by learned helplessness. Persons exhibiting personal learned helplessness are said to demonstrate lower self-esteem as they perceive themselves as failures in comparison to the rest of their peer population.

In answer to the second shortcoming in Seligman's (1975) theory, Abramson et al. (1978) introduced two sets of very distinct situations. The first set of effects is described in terms of global and specific. In the global situation, helplessness deficits occur in a broad range of situations. When deficits occur in a narrow range of situations, they are termed specific helplessness deficits. There is a continuum implied between these two attributions. The range depends on whether the failure is attributed internally or externally. If an internal attribution is made, such as, "I don't succeed due to my ability", this attribution has global implications. The possibility of such an attribution occurring again in another situation is quite strong. On the other hand, in the case of an external attribution, such as, "I didn't succeed because of a particular environmental condition", the implications are quite specific to that given situation.

The second set of effects are described by Abramson et al. (1978)

as chronic and transient. Chronicity develops when the helplessness is long-lived or recurrent. Short termed or non-recurrent helplessness is described as being transient. The range between these two effects depends upon whether the failure is attributed to stable or unstable factors. Stable factors, such as ability, will result in a long-lived or recurrent helplessness. Unstable factors, such as effort, will result in a short-lived or non-recurrent type of helplessness being exhibited.

Attributions in Relation to Learned Helplessness

A number of researchers have investigated the relationship between causal attributions for success and failure and resultant behaviour. Of these studies, several have focused on the success/failure attributions in relation to learned helplessness. Weiner and Litman-Adizes (1980) maintain that typically, ability and effort are believed to be the dominant causes of success and failure and task difficulty and luck are perceived to be amongst the remaining causes of achievement outcomes. The concepts of ability and effort are logically interdependent. A definition of the concept of ability implies a definition of the concept of effort and vice versa. Ability refers specifically to what a person can do and evidence of optimum effort is required before we accept performance as indicative of ability. Thus, ability limits the extent to which effort can increase performance. Weiner and Kukla (1970) found that when an outcome is success, the likelihood of ability attributions increases as task difficulty increases. Similarly in a failure situation, ability attributions are likely to decrease as task difficulty decreases. Consistency of the history of success or failure will determine the extent to which an individual attributes the result to

ability. The greater the consistency, the more apt an individual will be to attribute an outcome to the stable factor of ability. Relating this idea to learned helplessness then, it would seem evident that a helpless individual who encounters a frequent amount of failure experiences would be more likely than a non-helpless subject to attribute failure to his or her own ability. Klein et al. (1976) describe this phenomenon as occurring in their study of college students.

The majority of research in the area of causal attributions up until the mid 1970's focused on the adult population (Frieze and Weiner, 1971; Kukla, 1970; Luginbuhe et al., 1975; Weiner et al., 1972). Little attention was paid to the attributions made by children or more specifically to the development aspect of attributions.

Weiner and Peter (1973) using an experimental paradigm similar to Weiner and Kukla (1970) conducted one of the first studies to examine the development of causal attributions in children. In their study, the authors tested 300 children and young adults ranging in age from 4 to 18. The subjects were required to make moral and achievement evaluative judgements in sixteen situations. The results of the study revealed that in achievement contexts, pupils described as succeeding were rewarded by the subjects, while failing pupils were punished. As well, high effort was rewarded while a lack of effort was punished. The relationship between effort expenditure and achievement evaluation was influenced by cognitive growth. Reward for positive effort increases with age, while punishment for lack of effort is seen to increase until age 12 and then begins to decrease. Thus it appears that children's acknowledgement of the positive aspect of perceived effort increases with age.

Karabenick and Heller (1976) tested children at the first, third

and fifth grade levels in attempting to study the development of effort and ability attributions. Their results indicated that by first grade, children demonstrate some appreciation of the inverse relationship between effort and ability with regard to causal attributions. Further it appeared from the data that inferring effort expenditure from ability and outcome information occurs developmentally prior to making ability attributions from effort and outcome information. Nicholls (1975) reported findings suggesting that children's expressions of pleasure with success on a novel task were associated with attributions of success to ability, but not effort. The fact that the task used in this study was a novel one and that the children were expecting another testing session would appear to have focused attention on the implications of the outcomes for future performance thus making ability more important than effort attributions as a source of affect.

In an attempt to further the developmental analysis of effort and ability attributions as well as the understanding that difficult tasks require more ability, Nicholls (1978) employed four levels of reasoning on causal schemes involving the concepts of effort and ability with children ranging in age from five to 13. The four levels were modelled similar to Piaget's levels of cognitive development. The results of this study with respect to the development of effort and ability attributions coincide with those of Karabenick and Heller (1976) as well as those of similar studies conducted by Kun (1977) and Surber (1980). Level 1 and 2 children (the lowest end of the developmental spectrum) associated high ability with high effort and outcome. Expected teacher reward for success as a result of high effort and low ability was still evident at stages 3 and 4, while reward for high ability and low effort was seen to decline. Nicholls suggested that these results reflect the

differentiation of ability and effort that emerges at these levels.

The results of Nicholls' (1978) study also provide evidence for the belief that the association of greater incentive value of success with greater difficulty is a developmental occurrence key to the cultivation of achievement behaviour:

> The fact that level 2 reasoning about effort and ability develops at about the same time as the capacity to infer greater personal responsibility for success on more difficult tasks strengthens this suggestion that important changes in achievement motivation occur at about this point (p. 89).

Similar investigations (Veroff, 1969) have provided evidence that young children are less likely to show mastery behaviour and more likely to choose easy tasks.

Finally, Nicholls' investigation provides evidence indicating an age increase in agreement between teacher and child ratings of achievement. The results are consistent with similar findings on perceived competence by Harter (1982). Nicholls (1978) suggests that such findings of an increase in children's accuracy point to an inevitable inequality of achievement behaviour:

> If we are committed to the fullest possible development of intellectual skills in all children we must accept individual differences in achievement, but we must also seek to maintain motivation in all children not just the high achievers. Something is amiss if academic effort and learning are systematically encouraged in some at the expense of others. This inequality of effort and its increase with age appear inevitable in a competitive system of education. The higher motivation of high achievers appears dependent on the presence of low achievers for whom the presence of high achievers leads to a lack of motivation (p. 811).

Inherent in Nicholls' comments is the concept of the development of personal learned helplessness. According to Abramson et al.'s (1978) definition it would appear that children constantly made aware of their inadequacies are highly susceptible to the development of learned helplessness.

Dweck and Reppucci (1973) conducted one of the first studies to concentrate on the phenomenon of learned helplessness in children. Both male and female fifth grade students were given the Intellectual Achievement Responsibility (IAR) Scale (Crandall, Crandall, and Kotovsky, 1965) to determine the child's perception of responsibility for success and failure. Following this the children were asked to do a block replication task. The children were subjected to non-contingent failure during the task so as to identify them as persistent or helpless. It was found that the persistent children demonstrated a greater internal responsibility for their achievement outcomes than did the helpless children. In their tendency to attribute failure to the influence of external factors, the helpless children revealed a belief in their powerlessness to control the outcomes of the events. Similar results linking the deterioration in performance following failure to learned helplessness were also reported by Dweck (1975) and Dweck and Bush (1976).

A more recent study by Deiner and Dweck (1978) investigated the differences between children identified as either helpless or mastery oriented in terms of the nature, timing, and relative frequency of a variety of achievement-related cognitions. Their findings show that the helpless children attributed their lack of success, as expected to a lack of ability. The mastery oriented children, however, made little or no attributions, but instead engaged in self-monitoring and self-instruction. That is, helpless children focused on the cause of failure while the mastery-oriented children focused on the remedies for failure.

Evidence has been presented which supports the notion that a number of failure experiences may result in the development of learned helplessness (Hiroto and Seligman, 1975; Deiner and Dweck, 1978; Dweck, 1975; Dweck and Reppucci, 1973). These researchers have also indicated that

a circular phenomenon is created by this development of learned helplessness in that it appears to cause a deterioration in performance. The linking of learned helplessness theory to performance decrement has spawned a new vector of research in this area dealing with the occurrence of this phenomenon in the mentally retarded individual. The next section will investigate such research with specific regard to mentally retarded children.

Learned Helplessness in the Mentally Retarded

The mentally retarded as a population have been singled out as being quite susceptible to learned helplessness (Gibson, 1980; Wiesz, 1979, 1980, 1981a). This susceptibility can be analyzed into two separate factors which Floor and Rosen (1975) indicate as being the basis of learned helplessness. That is, a behavioural-motivational and a competence factor. A wealth of literature in the last few decades has pointed to the mentally retarded individual's frequent exposure to failure (Cromwell, 1963; Stevenson and Zigler, 1958; Zigler, 1971). Awareness of this high incidence of exposure has led researchers such as Cromwell (1963) to assume that the mentally retarded individual must therefore have a lower expectancy of success and a higher tendency towards avoidance behaviour than average non-retarded individuals. This assumption has been supported by a number of subsequent investigators (Gruen and Zigler, 1968; Ollendick, Balla and Zigler, 1971). The exposure to, and expectancy of failure by the mentally retarded can be likened to the uncontrollable situations used in early helplessness experiments (Hiroto and Seligman, 1975; Overmier and Seligman, 1967) as well as the failure induced helplessness experiences used by later researchers (Dweck and Reppucci, 1973; Deiner and Dweck, 1975). The consistency of such

experiences would as Floor and Rosen (1975) have indicated, seem to decrease the motivation to succeed, rendering the mentally retarded individual virtually helpless.

The second factor indicated as contributing to learned helplessness in the mentally retarded is that of competence. Weisz (1979) has indicated that the retarded child's school feedback may be helplessness inducing. Dweck, Davidson, Nelson and Enna (1978) have linked helplessness to patterns of teacher-to-child feedback in which a relatively high proportion of critical comments concern the intellectual quality of the non-retarded child's work. It is almost inevitable that the mentally retarded child might receive even more of this negative feedback than the normal child and in fact Raber and Weisz (1981) found that of two such groups matched on reading abilities, the retarded group did receive more helplessness inducing feedback. Such a pattern of feedback would according to Dweck et al. (1978) lead the child to interpret negative feedback generally as indicative of low ability; a stable, uncontrollable factor. In addition to feedback via classroom interactions with teachers, another contributing factor to this second aspect of competence may be the unguarded feedback received by the retarded children from non-retarded children, both in the school environment and in play experiences.

It would appear that two questions arise from the aforementioned literature on the mentally retarded. Questions which should stimulate an abundance of studies but for which have yet produced very few. The first question which one expects should have received considerable attention concerns whether the postulated susceptibility to learned helplessness does in fact exist. Secondly, a question which has received even less research attention, refers to whether helplessness, if indeed it does

exist, follows a developmental trend in mentally retarded children. Such a trend would, according to Abramson et al. (1978), result in the retarded displaying "personal" rather than "universal" and "chronic" rather than "acute" learned helplessness.

Floor and Rosen (1975) are credited with one of the first studies to identify the existance of learned helplessness in mentally retarded individuals. In their investigation these researchers discriminated between retarded and non-retarded on helplessness characteristics using a helplessness test made up of five behavioural items and three questionnaires.

The existence of this phenomenon in the mentally retarded was further supported by Gibson (1980). This study utilizing an attribution measuring device (developed from Weiner et al.'s, 1971, two dimensional schema) attempted to discern the attributions mentally retarded and normal boys make in the case of failure versus success experiences with a motor task. It was found in the case of success that normal boys attributed their performance to the stable, internal factor of ability whereas the mentally retarded boys attributed their performance to the stable, external factor of task difficulty, intimating they succeeded only because the task was easy. Failure attributions pointed to a similar trend in that the normal boys attributed their poor performance to the stable, external factor of task difficulty implying that environmental conditions contributed to their failure. In the case of the mentally retarded boys, failure was attributed to the internal stable factor of ability. These results coincide with inferences made by Smith (1977) and the results of Dweck and Reppucci (1973) in that the mentally retarded children, likened to low achievers, took less personal responsibility for success than they did for failure. Attributions such as these

are indicative of the existance of learned helplessness. The retarded children, in indicating less responsibility for success than for failure demonstrate an attitude of "no control", a hopeless demeaner.

In an attempt to further the notion of the mentally retarded child as being very susceptible to learned helplessness, Weisz (1981a) utilized the more accepted experimental paradigm involving induction of helplessness via a series of uncontrollable aversive experiences. In his study, Weisz operationally defined helplessness as a decline in the use of effective strategies over the course of four failure problems, and it was predicted that retarded children would score as being significantly more helpless than the non-retarded children. The children were also tested using a helplessness behaviour checklist. The checklist consisted of 18 items representative of frequently occurring manifestations of inappropriate attribution of difficulty or failure to uncontrollable factors or deficient perserverance. As was expected, the hypothesized results of the mentally retarded being identified as more helpless via the checklist were realized. The results on the strategy usage indicated that a deterioration in performance occurred only in the retarded children.

Evidence has been cited by Rholes, Blackwell, Jordan, and Walters (1980) which supports the existance of a developmental trend in learned helplessness in non-mentally retarded children. In their study Rholes et al. (1980) found that no evidence of helplessness existed in the kindergarten, first and third grade subjects who failed while the fifth grade subjects who failed in contrast appeared to be more helpless with respect to persistance and performance on a hidden figures task than those who had succeeded.

Weisz (1979) can be credited with a pioneer study which not only attempted to identify helplessness in mentally retarded children but

which also cast some light on the hypothesized developmental trend. Through the use of an MA-IQ orthogonal design Weisz's results clearly indicated that retarded children were more helpless at the upper MA level than at low levels. As Weisz (1979) indicates: "This finding is in harmony with the view that retarded children learn helplessness over years of development, and, by extension, that successive failures and helplessness inducing feedback play a causal role" (p. 317). As was indicated, precious little research has occurred in the area of developmental learned helplessness. Weisz (1981a) replicated his own findings (Weisz, 1979) in that helplessness was demonstrated at similar MA levels but since younger children were not tested these results provide little support for the development hypothesis. In his concluding remarks Weisz (1979) states that:

> Overall these rather complex findings are useful in suggesting several questions and hypothesis for future study. One such hypothesis is that retarded children "learn" helplessness over years of development. Although the present study has demonstrated one means of testing this developmental hypothesis and has generated initial data on its validity, definitive tests must await future research (p. 318).

It is with this need in mind that the developmental aspect of this study was undertaken.

SUMMARY

The theory of learned helplessness has been discussed from the pioneer studies performed by Overmier and Seligman (1967) to its reformulation by Abramson et al. (1978). Specific interest has been shown in the occurrence of this phenomenon in children. Further, this section has dealt with learned helplessness in specific relation to mentally retarded children.

It has been established by a number of studies that a developmental

trend exists in learned helplessness in mentally retarded individuals, to the detriment of their individual motivation.

The final section of this chapter will review a second theory of individual motivation; competence motivation. Of interest will be the extent to which these two areas of motivation research mesh in terms of their findings with respect to motivation in mentally retarded children.

COMPETENCE MOTIVATION

Human motivation has fascinated man for centuries. A vast number of different theories of human motivation have arisen from that fascination. One notable theory of interest in the present study is that of Intrinsic Motivation which can be considered to have two general theoretical approaches. The first, which is primarily taken by social psychologists concerns itself with the conditions under which extrinsic rewards undermine intrinsic motivation (Deci, 1975). The second approach focuses on mastery and competence (White, 1959, 1960, 1963; Woodward, 1958).

Robert White (1959), in what is now considered a "classic" article, has analyzed a wealth of motivation research, rooted in such areas as drive theory and psychoanalytic ego psychology in postulating "The Concept of Competence". Almost two decades later this concept, which White (1959) defined in terms of "an organism's capacity to interact effectively with its environment" (p. 297), has been extended by Harter (1978a) in creating The Perceived Competence Scale for Children (Harter, 1982).

White's Concept of Competence

The basic thesis of White (1959) is that traditional drive theories and psychoanalytic theories were incomplete or inefficient in explaining

human behaviour. In analyzing the two distinct areas, White intimates that the trends of both are relatively similar. Butler (1953) proposed that exploration may be considered a drive in that the opportunity to explore a novel environment is the reinforcing agent. Similarly, manipulation has been described as a drive as it is aroused by certain patterns of external stimulation and is reduced by actively changing the external pattern (Harlow, 1953). Other researchers have suggested that a need for activity will incite motivated behaviour (Hill, 1956; Kagan and Berken, 1954). White (1959) however, chose to group these along with other postulated drives such as hunger, thirst and sex under one single heading:

> Perhaps this is no more than a question of words, but I should prefer at this point to call it a problem of conceptual strategy. I shall propose that these three new "drives" have much in common and that it is useful to bring them under the single heading of competence. . . . It is in order to emphasize their intrinsic peculiarities, to get them considered in their own right without a cloud of surplus meanings, that I prefer in this essay to speak of the urge that makes for competence simply as motivation rather than as drive (p. 305).

The orthodox view of motivation in the psychoanalytic area is found in Freud's theory of instincts. Freud (1949) describes these instincts as "semantic demands upon mental life" (White, 1959:305). These instincts are either eros or the destructive instinct. A multitude of other instincts such as the instinct to master (Henrick, 1942) were also proposed by psychoanalytic theorists. White (1959) refutes these theories of individual instincts, as he does the drive theories in advancing the concept of competence. It is important to note at this point that competence, as defined by White is not a completely unique concept. The ideas advanced via the construct competence are a meshing of previous work in animal behaviour, child development, cognitive psychology, and psychoanalytic psychology. White attempts to gather up shortcomings of

these theories. In so doing he advances the notion of competence, which is intended in a broad biological sense rather than a narrow everyday meaning.

Behaviour's such as exploration, curiosity, mastery, play and one's general attempt at dealing competently with the environment have all been identified by White as promoting an effective, competent, interaction with the environment. Such studies as Piaget's (1965) observations of infants and children and Gessell et al.'s (1943) systematic growth studies were utilized to demonstrate these behaviours and their push towards competence. Unlike earlier theorists, White classified all behaviours as motivated by the broad representation of competence.

Beginning with the identification of competent behaviours, he extrapolated to the idea that there must be a competence motivation. White (1963) suggested that the behaviour's urge towards competence can be conceived of as energies:

> In psychoanalytic terms we can conceive of them as energies that are inherent in the mental or ego apparatus. They will be claimed and utilized from time to time by the demands of an instinctual drive; all drives must make use of the apparatus on their way to a suitable consummation. When not thus claimed they will operate in their own way, and this way is most plainly revealed in exploratory and manipulative behaviour, which seems to perform the service of maintaining and expanding an effective interaction with the environment (p. 33).

It was with this in mind that White (1959) coined the term "effectance" as representing the motivational aspect of competence.

Effectance

The motivational aspect of competence, effectance, was assumed to be neurogenic in nature in that it represented what the neuromuscular system wanted to do when it was otherwise occupied or gently stimulated by the environment. The term itself connotes action. White (1963)

concluded that the living organism does not typically learn through passiveness, but rather learns via action and the consequences of action. Of course it is recognized by White (1963) that children are not motivated to play and explore because of a desire to practice skills: "They play and explore because it is fun - because there is something inherently satisfying about it - not because it is going to have value at some future time" (p 34). This motive was not conceived as being intense in the same way pain may be. White did however infer that effectance motivation is persistent in the sense that it occupies most spare waking time. In order for an individual to gradually change his relation with the environment he must carry on a continuing transaction. The result of these transactions is never climactic. White pointed out that satisfaction must be realized in a trend of behaviour rather than a goal that is achieved.

Effectance motivation is aroused by stimulus conditions which offer difference in sameness (White, 1959). In other words, an individual will engage in a specific behaviour until such a point where the behaviour no longer results in new or interesting situations taking place within the environment. The specific nature of effectance motivation in terms of its neural basis was not expanded upon by White, however the urge towards competence is inferred from behaviour which exhibits lasting focalization and has characteristics of exploration and experimentation. White (1959) states that it is: ". . . characteristic of this particular sort of activity that it is selective, directed, and persistent, and that instrumental acts will be learned for the sole reward of engaging in it" (p. 323). It is not the resultant learnings which effectance motivation aims for but the failing of efficacy.

One of White's most significant contributions in proposing this

effectance construct is his distinction between young children's and older individuals' effectance motivation. White (1959) postulated that in early life effectance motivation is undifferentiated whereas later in life it becomes profitable to distinguish between various motives such as cognizance, construction, mastery and achievement. As will be seen this tenet represents one of the foundations for The Perceived Competence Scale (Harter, 1982).

Widespread discontent with prevailing theories of motivation led White (1959) to formulate the concept of competence. The basic tenet of this concept is that behaviours such as grasping, crawling and walking, attention and perception, language and thinking, exploring novel objects and places and producing effective changes in the environment all form part of the processes through which the child learns to deal effectively with his environment. Effectance has been coined as the term for competence motivation. In essence this motivation is characterized by a feeling of efficacy. Effectance motivation is thought to be undifferentiated during early childhood. Later in life various component motives are distinguished as cognizance, construction mastery and achievement.

White's competence and competence motivation constructs have been deemed thought provoking and useful, yet quite unsuitable for empirical testing. It is for this reason that Harter (1978a) began an extension of White's formulation.

Effectance Motivation and Perceived Competence: A Developmental Model

The construct of effectance proposed by White (1959) is considered as having great appeal, yet has little explanatory value. Harter (1978a) recognizing this fact, but in turn recognizing also its conceptual

strengths, proposed a reconstruction of effectance motivation. Harter's decision to maintain the term effectance in her systematic reconsideration of White's construct lies in the fact that the word itself refers to several facets of this motive: (1) the organism's desire to produce an effect on the environment, (2) the added goal of dealing effectively or competently with the environment, and (3) the resulting feeling of efficacy.

In order to understand fully the extent of Harter's reconstructed effectance model it is best to first consider White's simple paradigm. The general features of White's model are represented in Figure 8. As can be seen, though the model clearly conceptualizes the nature of this motivation construct, it lacks the precise information needed to subject it to empirical testing.

Figure 8 deleted due to
copyright laws

Stated simply, effectance motivation, as White perceived it, impels the child to engage in mastery attempts. If these attempts are successful - that is, if they result in competent performance - the child experiences

feelings of efficacy or inherent pleasure. This in turn should maintain, if not increase, the child's effectance motivation.

Harter (1978a) advanced a general framework, which she proposed to be considerations leading to the refinement of the original effectance motivation construct. A summary of these points will be of benefit in understanding the new model which Harter postulated. The points are as follows:

1. Effectance motivation is considered as having components rather than as a global or unitary construct. These components are considered to exist in a developmental framework, which describes both the structure and content of the motives system.
2. The effects of failure experience on the components of effectance motivation are attended to rather than just the success situations which White contends with.
3. Successful mastery attempts which provide an optimal degree of challenge produce the greatest sense of satisfaction. The concept of intrinsic pleasure derived from success is considered to be lacking in its analysis of the feeling of efficacy.
4. One of the most important considerations is the role of the socializing agents in one's environment, and their effect in maintaining, enhancing or attenuating the components of effectance motivation. In addition, a critical aspect of one's socialization history is the various functions of reward and their affects on the motive system.
5. A developmental consideration of the effects of reinforcement over time elucidates the process by which children internalize both a self reward system and a set of mastery goals.
6. Attention must be paid to the issue of extrinsic motivation in addition to intrinsic motivation as well as the relative strength

between the two.

7. Finally and of real importance to this study is the attention which must be paid to such affiliated constructs as perceived competence.

Harter's developmental refinement and extension of White's model of effectance motivation is represented in Figure 9. A brief review will confirm White's model (the central portion of Figure 9) as the roots or anchor. As can be seen however, this conceptualization refines the earlier global construct in suggesting the fruitfulness of examining several different skill areas in a child's life - cognitive, social and physical domains and their affect on mastery attempts. These components are considered by Harter (1978a) to have developmental implications:

> The appeal of the component model is that it should permit us to ask more precise developmental questions. For example, do these components change in strength with age? Does effectance motivation become more differentiated with age, and if so, what type of developmental model is appropriate? (p. 40).

Also evident in the extended model is the inclusion of the effects of failure (left hand side of the model) as well as success (right hand side of the model) on mastery attempts as well as the interaction of the two. Success is seen as sufficient, the only prerequisite for the happy outcomes and clusters of characters displayed on the left whereas the only consequences of failure are the negative outcomes and attributes described on the right. Obviously the picture is more complex. These complexities must lie in the interaction of the two.

A critical addition to White's (1959) formulation involves the effect of the child's socialization history. Harter (1978a) represents in the outer loop of her diagram the positive reinforcement features on the left and the influence of negative reinforcement on the right. An important developmental distinction is made in Harter's acknowledgement of the dependency of the very young child on the significant adults in

Figure 9 deleted due to

copyright laws

his or her life. Older children are obviously not impervious to adult evaluation, however studies such as Harter (1975b) suggest that they have internalized standards of success and failure and utilize these intrinsic norms in making their judgement in conjunction with social reinforcement.

In extending the general role of positive reinforcement during the early years, Harter (1978a) further discussed implications for development during middle to late childhood:

> The argument to be advanced is that with sufficient positive reinforcement for independent mastery attempts during early childhood, the child gradually internalizes two critical systems, a self-reward system and a system of standards or mastery goals (p. 50).

In describing the eventual internalization of these systems Harter is quick to point out that one should not expect to find individuals capable of existing without any external reinforcement. Rather, these individuals are seen as being capable of operating on a relatively thin schedule of reinforcement.

The entire right side of the model illustrates negative outcomes. For these children the predicted outcome of a negative socialization history will be the exact opposite to that of children on the left hand side. These children will increasingly demonstrate a need for external approval as well as a dependence on externally-defined goals for behaviour. An important oversimplification of the model is identified by Harter (1978a) with regard to socialization history:

> Clearly we need to attend to the effects of the peer culture as a dispenser of reinforcements, a determiner of mastery goals, and an influence on one's self-esteem. It may well be that the model outlined is particularly appropriate for the early years of development but needs additional refinement for the periods of later childhood and adolescent development, specifically with regard to the influence of the peer culture (p. 54).

The reinforcement history of individuals has implications not only for one's motivational orientation, but also for one's perceived competence

(self-esteem) and one's sense of control over the outcomes in one's life. This issue of self-esteem was not discussed in White's classic 1959 paper, however in a subsequent publication (White, 1963) he did express the general view that the roots of self-esteem lie in the early competence experiences of the developing child.

Rotter (1966) developed the concepts of internal and external locus of control. He argued that positive successful encounters with the environment led to a belief in a self-determined competence, which he titled internal locus of control. External locus of control, he viewed as a defensive response to failure.

Harter (1978a) through her model postulated an approach to the idea of control quite different from that of Rotter (1966). A reinforcement history which produces rewards for independent mastery attempts provides incentives for this type of performance and the positive affects which accompany it. This coupled with general information feedback that such attempts are desirable leads the child to a generalized sense of internal control. That is applied to many situations in his or her life. Conversely, Harter debated, if a child's reinforcement history discourages such attempts at mastery, this child becomes more and more dependent on external reinforcement.

In contemplating Harter's model one would assume that the combination of perceived competence or high self-esteem and an internal perception of control would enhance the child's feeling of efficacy. This would in turn maintain or increase a child's effectance motivation. A decrease in effectance motivation would therefore appear to be influenced by low perceived competence and an external perception of control.

It has been hypothesized by Harter (1980) that the affective response of the parent, in terms of acceptance, affection and warmth has

a major impact on the child's self-esteem. A major contention of Harter's is that though somewhat related, the constructs of self-esteem and perceived competence must be viewed as conceptually distinct and must be measured as such. In keeping with her component philosophy, Harter devised a scale to tap the most relevant skill domains in a child's life, namely (a) cognitive competence, (b) social competence, and (c) physical competence, primarily focused on athletic skills. In addition a fourth subscale was devised to tap the child's overall general self-esteem. This fourth scale was qualitatively different in that the items contained no reference to competence. In deciding on the inclusion of this scale Harter (1980) argued that there are those children who do not see themselves as competent but nevertheless still "like themselves". Such an attitude would be missed without the inclusion of this scale.

The final link in Harter's hypothesized model involves the internalized evaluation of perceived competence. As children begin to internalize a system of mastery goals, criteria for success and failure, and a set of perceptions concerning the source of control, a sense of competence becomes crystalized. A positive sense of competence develops if perceptions of control are internal, however as Harter (1980) points out: "If children do not know who or what is in control, or view (powerful) others as responsible it is likely that their sense of competence will be relatively negative" (p. 11). This situation, described by Harter as leading to a negative sense of competence demonstrates marked similarities to the uncontrollable situations Seligman (1975) describes as leading to learned helplessness.

Up to this point the information presented has for the most part been conjectures by White and Harter. As with a great number of theoretical constructs, effectance motivation and perceived competence

appear remarkably clean until tested. There are tremendous individual differences in considering the development of the child, a fact which often tends to put to test such "clean" models as Harter's. The following section will attempt to review the empirical evidence for Harter's model, focusing on her attempts to quantify her conjectures through such practical measures as The Perceived Competence Scale for Children.

Empirical Support

The concepts of competence and effectance motivation are relatively new constructs and as such, only a small number of experiments have been conducted specifically with them in mind. One of the first investigations was carried out by Harter, Schulz, and Blum (1971). These workers were concerned with the relationship between a child's smiling behaviour and the correctness of his responses on a pictorial word-recognition task. This purpose was seen to be consistent with White's (1959) concept of effectance motivation which emphasized the gratification derived from a sense of mastery and competence. Results of this study indicated that the two groups of children tested (with mean CA's of 4.5 and 8.6) both smiled significantly more to correct than to incorrect items. As Harter et al. (1971) point out, the importance of this finding lies in the fact that the children were not told whether they were correct or incorrect on any item. Hence, the children's smiling could not be attributed to specific reinforcement from the experimentor as such, but more to their own knowledge or beliefs of the successful outcome of their performance. These results are consistent with White's (1959) theory of effectance motivation and gratification due to competence.

A similar study to Harter et al. (1971) was conducted by Harter (1974), but which attempted to provide a more sensitive test of the relationship between task difficulty and pleasure derived from cognitive

mastery. An anagram task was utilized to this end. A further purpose of this study was to assess the extent to which pleasure is associated with the active discovery of the solution, as opposed to successful repetitions of the correct response after the problem is solved. Thus the overall study represented a length of anagram (three, four, or five letters) x type (word or nonsense) x sex design. The results replicated those of Harter et al. (1971) in that greater smiling and enjoyment was found on correct than on uncorrect anagrams. Of much greater importance however was the demonstration of a positive relationship between smiling and difficulty level among correctly solved anagrams. These findings indicated that the greatest gratification is derived from the solution of the most challenging problems, whereas easily solved problems provide relatively little pleasure. In addition, Harter's (1974) study also showed clear support for the predicted decline in smiling with repetitions of correctly solved anagrams. These results were judged as not being merely due to fatigue or satiation because of the reappearance of smiling when new and challenging anagrams were presented. A refinement of the effectance motivation construct appears to have occurred as a result of this study. It is apparent that feelings of efficacy are not necessarily derived from objective success or competence, but rather are more likely to occur in those optimally challenging situations which provide a subjective sense of mastery.

In her continued efforts to empirically test the effectance motivation construct, Harter (1975a) investigated the hypothesis that among older children, mastery motivation defined as the desire to solve cognitively challenging problems for the gratification inherent in successful problem solving, is stronger than the desire for praise and approval. Harter investigated this hypothesis with two groups, those

who scored high and those who scored low on the Children's Social Desirability Scale (Crandall et al., 1965). These authors have found that high scorers are more concerned with others' evaluations, have lower self-esteem, and are more suggestible and inhibited than low scorers. It was predicted that mastery-motivation would be of greater importance to the low scorers versus the high scorers.

As was expected, the findings indicated that mastery motivation was more important for the low scorers. The results also provided support for the notion that the desire to solve cognitively challenging problems for gratification derived from discovering the solution is an important determinant of performance among older children. Furthermore, Harter (1975a) found that the high scorers exhibited longer playing time in the social condition compared to the experimentor absent condition. This suggests the need or desire for adult praise is a strong motive amongst these children. Harter speculated from these findings that a developmental decline in need for adult approval may be determined from both an increase in mastery motivation which supplies intrinsic motivation and the child's continued external praise and reward. Attenuation of this developmental internalization may be the result of insufficient social reinforcement for mastery efforts in early childhood.

It was felt by Harter (1975b) that the aforementioned study did not directly test the developmental assumption that the relative importance of the two motives (mastery motivation for the inherent gratification of finding a solution versus the desire or need for praise and approval) shifts with age. To this end Harter tested children of ages four and ten with the same measures as Harter (1975a) under the premise that the older children would be more mastery oriented, gauged by time spent at a task. The study thus consisted of an age (CA 10 versus CA 4) x sex

(girls versus boys) x task (unsolvable versus solvable) x condition (social reinforcement versus E-absent) design. The findings supported the belief that for the older children, the desire to solve cognitively challenging problems for the gratification inherent in discovering the solution is a strong motive. This was demonstrated by much longer playing time on the unsolvable versus the solvable task as well as verbal reactions on the two tasks. There was no support for the hypothesis that among preschool children praise and approval would be the major determinant of playing time. In fact, the younger children demonstrated an overwhelming enthusiasm for the task in general, independent of both the type of problem and condition. It was suggested by Harter (1975b, p. 346) that these younger children demonstrated a different type of mastery motivation, one which involves "the production and observation of interesting sensory events which they could control through their own actions".

It appears that both groups demonstrated some form of mastery motivation, manifested however, at two different levels on this particular task. Both types appear to be in concordance with White's (1959) concept of effectance motivation, which involves producing an effect upon the environment, making things happen and controlling outcomes through one's own actions. Harter suggests from these results that this does not refute the developmental hypothesis by any means but infers that motives such as mastery are also major determinants of the behaviour of younger children. She further suggests that a design which pits one type of motivation against another should be employed in order to assess the relative importance of each motive at different developmental levels.

Harter (1978b) refuted, somewhat, conclusions from her earlier studies (Harter, 1974, 1977) which documented a positive linear relationship between smiling and difficulty level for correctly solved items. She hypothesized that the relationship was in fact a curvilinear model, in that the assumed positive relationship might not continue through to the most challenging items an individual is able to master. It was postulated by Harter that there are certain very difficult tasks which one may eventually complete successfully but from which one does not derive maximum gratification.

This new hypothesis was tested by broadening the range of difficulty of the anagrams test and in addition to this the children were asked to rate the difficulty of each anagram. It was felt by Harter that the relationship between pleasure and perceived difficulty would provide the most sensitive test for the curvilinear model.

Support for the curvilinear relationship between pleasure derived from mastery and task difficulty was reported by Harter in her findings. This effect was most evident in the relationship between smiling and perceived item difficulty as well as from verbal data. Harter reported that 70 percent of the children in the game condition expressed their preference for items of optimal difficulty. These findings are similar to those of attribution theorists (Smith, 1977; Trope, 1975; Weiner, 1974) who report that tasks which one considers to have a 50/50 chance arouse the greatest level of motivation. Harter's findings also revealed that the preference for optimally challenging tasks is attenuated under conditions where the children are working for extrinsic rewards in the form of grades. The existence of extrinsic influence of grades was seen to decrease the child's tendency to choose optimally challenging tasks, attenuate the pleasure derived from performance, and as Harter

intimated, would appear to create anxiety over the possibility of obtaining poor grades.

Evidence with Respect to the Mentally Retarded

Thus far evidence has been cited which has lent support for the effectance motivation construct put forth by White (1959) and expanded by Harter (1978a, 1980, 1981). As was discussed in brief earlier, developmental constructs such as this receive tremendous challenge when put to empirical test due to the wide individual differences witnessed in children. One group of children which have received some attention with respect to effectance motivation and perceived competence is that of the mentally retarded.

Harter and Zigler (1974) piloted one of the first studies to assess effectance motivation in retarded children. Using normal and noninstitutionalized educable mentally retarded children, they attempted to identify and construct measures of several behaviour categories that White considered as indicative of effectance motivation and to assess the validity and interrelatedness of each measure. The four categories selected were (a) response variation, (b) curiosity for novel stimuli, (c) mastery for the sake of competence, and (d) preference for challenging tasks.

Harter and Zigler's reasoning for the inclusion of the retarded sample was that one method of validating measures of effectance motivation is to include groups of subjects whose effectance motivation is expected to differ. Evidence has been cited (Cromwell, 1963; Zigler, 1971) that retarded children have deprived life histories which lead to an inordinately high need for social reinforcement, wariness of adults, fear of failure and lower expectancy of success. This, as Harter and

Zigler propose would lead to them demonstrating less effectance motivation than normal children.

The findings of this exploratory study showed moderate success in constructing effectance measures sensitive to the assumed differences between normal and retarded children. From these findings, Harter and Zigler maintained that support for the validity of the measures was found, based on the assumption that certain factors in the socialization histories of the retarded children had caused other motivational factors to take precedence over effectance motivation. Verbal data was highly congruent with the performance data, which suggested that the tasks measured what they purported to. Also of importance is Harter and Zigler's overall finding that normals preferred a prize symbolizing their competence more than did the retarded children, which was consistent with the general effectance interpretation.

Intercorrelations among the four tasks, although positive across all subjects, were relatively weak. As well, within each subject group little relationship between scores on different tasks was reported. Harter and Zigler imply from this the existence of several different motivational factors operating within the general motivational concept of effectance motivation.

A follow-up to Harter and Zigler (1974) was performed by Harter (1977). The intent of this study was to determine if a) the same relationship as was found in Harter et al. (1971) would be obtained at a younger developmental level (age 6) and b) more important to our present discussion, the mentally retarded subjects would manifest less pleasure than would MA-matched normal subjects despite the fact that the actual competence level of the two groups was comparable. This second question was hypothesized by Harter because of such factors as

the retarded child's fear of failure and anxiety in problem solving situations.

The results of this study revealed that the relationship between pleasure derived from mastery and difficulty level is affected by the intellectual level of the child, that is, whether the child is of normal intelligence or retarded and by the presence or absence of social reinforcement for success. In addition, as was hypothesized by Harter, the normal children displayed more spontaneous smiling over their successes than did the retarded children. It was reported that they appeared to be more concerned about failure and have more doubts about their ability as well as demonstrating a dependence on the adult experimentor for feedback, praise and direction than the normal children. Not only was there less pleasure exhibited by the retarded than the normal children, but the relationship between pleasure over success and difficulty level for the groups differed. A positive relationship between smiling and difficulty level was registered for the normal children. Conversely for the retarded, not only was this relationship not found but there was a nonsignificant trend in the opposite direction in that they tended to smile slightly more to the easier, compared to the harder items.

Harter (1977) summed up the findings with respect to effectance motivation and the mentally retarded:

> These findings are consistent with the view that the position of effectance motivation has shifted downward in the motive hierarchy of retarded children as other motives such as fear of failure, low expectancy of success, outer-directedness, need for approval, etc., have become more salient. The author's previous work has indicated that such components as curiosity, preference to challenge, and mastery for the sake of competence, to name a few components, are lower in the hierarchy of retarded children. The present study extends this picture in revealing that the retarded children manifest less spontaneous pleasure over their success than do normal children (p. 490).

It has been demonstrated in these few studies that the construct of effectance motivation is a viable concept when discussing motivation in children. Obviously more evidence is required to further the understanding of this construct. Furthermore, the relationship between effectance motivation and the mentally retarded has been discussed briefly. Harter (1978a) hypothesized through her model that the demonstrated motivation to achieve mastery goals and internalize self-reward systems as well as one's reinforcement history are highly correlated with one's perceived competence. To this end Harter (1982) has developed the Perceived Competence Scale for Children. The following section will highlight this scale and briefly discuss its applicability to mentally retarded children.

The Perceived Competence Scale for Children

In an effort to operationalize her construct of perceived competence, Harter (1982) fashioned a scale devised to assess a child's competence. In keeping with her notion of the competence model, the underlying premise of the scale was that children do not feel equally competent in every skill domain. As a result three competence scales emerged; (a) (a) cognitive competence, (b) social competence, and (c) physical competence. In addition, a fourth subscale was devised to tap the child's overall self-esteem. Though Harter (1980) has been one of the strongest critics of self-concept scales such as the Coopersmith Self-Esteem Inventory (1967) because of their global nature, she argued that there are children who may not consider themselves competent in "any" of the domains but still like themselves. An attitude such as this would be overlooked were it not for this general self-worth scale.

Harter (1982) cited four primary goals in devising the Perceived

Competence Scale for Children. These goals were to devise an instrument which: (a) profiled the child's perceived competence in the cognitive, social, and physical domains, (b) registered the child's sense of general self-worth, (c) revealed a sound factor structure demonstrating that the dimensions were psychologically meaningful, and (d) minimized the influence of socially desirable response tendencies.

Remarkably, all the goals cited above were realized in the 1982 study. Furthermore, although the scale was originally designed for use with elementary school children, Harter concluded that their experience with junior high school students demonstrated that the scale could be employed with these students. In fact, the factor pattern and subscale reliabilities reported were highly stable across grades 3 through 9.

It has been demonstrated (Harter and Zigler, 1974; Harter, 1978) that the position of effectance motivation with respect to the mentally retarded has shifted downward. This occurrence has been attributed to other motives such as fear of failure, low expectancy of success, outer directedness, and need for approval demonstrated by others (Cromwell, 1963; Zigler, 1971). According to Harter (1975b) a reinforcement history such as has been reported in the mentally retarded leads to a dependence on the external environment for approval and externally imposed goals. This in turn has been hypothesized to result in a perceived lack of competence (Harter, 1978a).

Silon (1980) examined the factor structure for the perceived competence scale given to 126 mentally retarded children between ages 9 and 12. The results of this study indicated a two factor structure. One factor, labelled "competence" included items primarily from the cognitive and physical domain, implying that the retarded children did not distinguish between the two. The second factor, labelled "popularity"

drew items from the social scale. Silon's study showed no evidence for a general self-worth. Harter (1982) suggested that this implied that these children do not make the type of abstract evaluation of self which is tapped by the general self-worth items. The implications of these findings is that the perceived competence construct may be qualitatively different at different developmental levels.

SUMMARY

The model of effectance motivation introduced by White (1959) and extended by Harter (1978a, 1980, 1981) has been exposed to fairly extensive empirical testing in the past ten years. A direct result of this experimentation has been the emergence of the Perceived Competence Scale for Children. A tremendous amount of testing had demonstrated this scale's validity in tapping normal children's perceptions of competence and general self-worth. Comparatively speaking, a dearth of research has utilized this scale with the mentally retarded population. This population's supposed susceptibility to low perceived competence in combination with the fact that little research as yet has dealt with this area, has served as one of the bases for the initiation of this study.

CHAPTER III

METHOD

SAMPLE

Forty-eight educable mentally retarded boys from 9 schools within the Edmonton Separate School System were subjects for the study. The subjects' 'IQ's' ranged from 65 to 80 as per school records. Subjects were selected on the basis of their falling within one of three chronological age groups, that is, if their birth dates fell between January 1 and April 30 in the years 1969, 1971 or 1973 they were included in the pool of 16 nine year olds, 16 eleven year olds or 16 thirteen year olds. Children who exhibited any physical or neuromuscular handicaps, gross behavior problems or predominantly a second language were excluded from the sample. A table of random numbers was utilized to assign the boys within each age group to either the success or failure condition. Thus, each age group consisted of 8 boys in the success condition and 8 boys in the failure condition. Descriptive data for the sample is included in Table 1.

TABLE 1

DESCRIPTIVE CHARACTERISTICS OF EDUCABLE MENTALLY RETARDED BOYS

	EMR Boys Age 9		EMR Boys Age 11		EMR Boys Age 13	
	MEAN	SD	MEAN	SD	MEAN	SD
Chronological Age	9.38	.40	11.32	.29	13.45	.29
n	16		16		16	

APPARATUS AND TASKS

The Perceived Competence Scale for Children

The perceived competence of each educable mentally retarded subject was determined through their answers on The Perceived Competence Scale for Children. A review of the literature concerned with this construct provided in Chapter II indicated that three competence areas were distinguished by Harter (1978), cognitive, social and physical in addition to the general self-esteem subscale. The cognitive competence subscale includes school as well as nonschool performance. School related competence refers specifically to doing well at school work, feeling good about one's performance in school, finishing one's work quickly, etc. The less specific cognitive items refer to being smart, remembering things easily and so forth.

The social competence subscale taps interpersonal competence with respect to one's peers. Issues such as having a number of friends, being easy to like, being an important member of one's class, and being popular are included. The physical competence subscale refers primarily to athletic skills, for example doing well at sports, learning new outdoor games readily, preferring to play sports rather than watch, etc.

The general self-esteem subscale is qualitatively different from the preceeding three. It does not refer to any particular skill domain or activity. These items include references to being sure of one's self, being happy with the way one is, feeling good about the way one acts, etc.

The Perceived Competence Scale consists of a "structured alternative format" in which the child is presented with the following type of question:

Really True For Me	Sort of True For Me				Sort of True For Me	Really True For Me
☐	☐	Some kids often forget what they learn	BUT	Other kids can remember things easily	☐	☐

The child is first asked to decide which kind of kid is most like him or her, and then asked whether this is sort of true or really true for him or her.

The general procedure in scoring is to score each item on a scale from 1 to 4, where a score of 1 indicates low perceived competence and a score of 4 reflects high perceived competence. Thus, in the example given above, the child who first indicates that he often forgets what he learns and then describes this as really true for him would receive a 1. The child for whom this part of the statement is only sort of true would receive a 2. The child who indicates that he can remember things easily, though describes this as only sort of true for him, would receive a 3, and the child for whom this part of the statement was really true would receive a 4.

Attribution Measuring Device

The experiment required children to relate Heider's (1958) four causal attributions for either their success or failure on a motor task. Because of the population under study, educable mentally retarded boys, there was a necessity to keep the understandability of the instruments used simple and interesting. Gibson (1980) utilized an "Attribution Box", modelled after a similar instrument used by Nicholls (1975), as a method for the children to relate their causal attributions. The instrument consisted of two rectangular boxes which encased four half discs. One side of the box was labelled, "I succeeded because . . ."

and the other side was labelled, "I failed because . . .". The four half discs were coloured differently and were entitled respectively: ability, effort, task difficulty and luck. A pilot study was undertaken to investigate the feasibility of using this same type of apparatus.

The pilot study was conducted with a group of educable mentally retarded boys of ages 8, 10, and 12 from the Edmonton Separate School System. This simple study which had the boys make attributions for their success and failure on a motor task found the children to have difficulties understanding Heider's four attributional terms which were used by Gibson (1980). For example, the sentence "I failed because of the task difficulty" was far too advanced for most of the boys. They could not understand what task difficulty referred to.

As a result of this pilot study, it was decided to utilize the Attribution Box, replacing Gibson's four causal attribution terms with more colloquial expressions. Thus, Heider's four causal attributions were represented for success situations as: "I succeeded because; 1. I'm good. 2. I tried hard. 3. It was easy. 4. I am lucky", and for failure situations as: "I failed because; 1. I'm not good enough. 2. I didn't try hard. 3. It is too hard. 4. I'm unlucky".

Each of the causality factor discs had 10 equal sectors graduated in the form of a Likert-type scale. After each set of ten trials, the subjects were asked to think carefully about why they succeeded or failed and to indicate the degree to which they felt each of the causality factors contributed to the resultant outcome.

Ball Rolling Task

The ball rolling task was similar to that used by Gibson (1980). A rubber ball, 3.4 centimeters in diameter was used by the subjects in

a task which required them to roll the ball with their preferred hand to a target in the centre of an inclined board. The target board was 1.84 meters long and 46.0 centimeters wide, with borders 5.0 centimeters high. The upper end was raised to a height of 30.0 centimeters. A target area 8.0 centimeters wide extending across the width of the board was located 130.0 centimeters from the front edge. Two wooden rails parallel to each other encased the target board providing an enclosed pathway from the target board to within 30.5 centimeters of the restraining line. Deviation areas of 4.2 centimeters were marked on the inner and top surfaces of the rails. In terms of scoring, the target value was zero, while the area above the target had values 1 to 11 and below had negative values of 1 to 11. Subjects assumed a kneeling position behind the restraining line and to the side of the centre division opposite that of the preferred hand.

Subjective Questionnaire

This simple questionnaire consisting of four questions was designed to gather further information as to subjects' attitudes towards the ball rolling task. The questions asked were as follows:

1. Is this an easy or a hard task?
2. Do you think if you tried this task again you would succeed or fail?
3. Do you think your friends would succeed or fail at this task?
4. Do you think your friends would do better than you, worse than you, or the same as you?

Question number one was concerned with the two groups' attitude towards the difficulty of the game after having experienced continued success

or failure at it. Question two attempted to discern whether the success or failure experience would have any lasting influences (chronic versus transient effects). The third and fourth questions were aimed at determining whether the children considered the outcome of the performance to be personal or universal in nature.

PROCEDURES

Subjects performed individually on all the tasks. During the walk to the testing room each subject was told that he would have to answer a few questions and then would be able to play a ball game.

Phase 1. The Perceived Competence Scale for Children

Upon arrival in the testing room, the subject and tester seated themselves at a table with their chairs situated beside each other to allow both the tester and the subject to be able to read the same scale. The subject was then given the following instructions:

> We have some sentences here and, as you can see from the top of the sheet where it says "What I am like", we are interested in what kind of a person you are like, and how you think and feel about different things. This is not a test. There are no right or wrong answers.
>
> First let me explain how these questions work. There are two sample questions at the top. I'll read the first one to you. (Tester reads first sample question.) This question talks about two kinds of kids.
>
> (1) What I want you to decide first is whether you are more like the kids on the left side who would rather play outdoors, or whether you are more like the kids on the right side who would rather watch T.V. Don't mark anything down yet, but first decide which kind of kid is most like you, and go to that side.
>
> (2) Now, the second thing I want you to think about, now that you have decided which kind of kid is most like you, is to decide whether that is only sort of true for you or really true. If it's only sort of true, then put a check in the box under sort of true; if it's really true for you, then put a check in that box under really true.

(3) For each sentence you only check one box. Sometimes it will be on one side, and other times it will be on the other side of the page, but you can only check one box for each sentence. Do you have any questions?

(4) Okay, let's try the second sample. (Tester reads and goes through the same explanation above in points 1, 2 and 3.)

(5) Okay, those were just for practice. Now we have some more sentences which I'm going to read out loud. For each one, just check one box, the one that goes with what is true for you, what you are most like.

The subject with the aid of the tester then completed the 28 statement Perceived Competence Scale.

Phase 2. Causal Attributions for Successes or Failures at the Ball Rolling Task

The subjects next progressed to the ball rolling task. The following instructions were given for this task:

> This is a ball rolling board which measures how good you are at rolling a ball to a target. What I want you to do is to try to roll this ball up the board, just to the target area; no further or no closer than that. (The task is demonstrated.) I would like you to perform three practice trials for me.

The trials were monitored and any questions answered. Next, the child's attention was directed towards the "Attribution Box" and the following instructions given:

> This box will allow you to show me why you feel you passed or failed on the ball rolling task. There are four reasons on this side that children often give for passing the ball rolling task.

Tester indicated four half discs with attributions for success.

> On the other side of the board are these four answers children often give when they fail at the ball rolling task.

Tester indicated four half discs with attributions for failure.

> When you have finished rolling the ball ten times I will tell you whether you passed or failed. If you pass, I would like you to tell me if any of the reasons in the box are reasons for your passing. If any of them are, you could tell me how much each reason contributed to your failure. You might have contributed this much (3/10), this much (5/10), or even this much (9/10). If you fail, I will have you use the box the same way, only you'll tell me your reasons for failing.

(The subject was given a success and failure trial in order to see that the requirements were understood.)

The testing was commenced with the following instructions:

I now would like you to perform three sets of ten trials for me. After each 10 trials I will tell you whether you succeeded or failed and you can then use the discs to explain why this occurred.

Each subject was earlier randomly assigned to the success or failure condition. A child in the success condition was told after each set of trials that he had passed the task no matter how well he had done. Conversely, subjects in the failure condition were told after each set that they had failed the task. Subjects who questioned their having failed or succeeded were told that this result was in comparison to other children their own age. Each subject was given ample time to indicate his attributions for performance on the ball rolling task using the Attribution Box. Following all 30 trials those boys who received failure feedback were given additional trials and strategic instruction on proper technique in order to alleviate any anxiety or negative effects that may have been included from the failures.

Phase 3. Subjective Questionnaire

Following the ball rolling task the tester and subject again sat down at the table. The tester then asked the subject four subjective type questions related to the task just completed. Subjects were encouraged to answer "in their own words" and were given ample time to consider the questions. The tester recorded the subjects' answers on a record sheet verbatim.

CHAPTER IV

RESULTS AND DISCUSSION

For ease of understanding, the results for the causal attributions and task performance, the subjective questionnaire and The Perceived Competence Scale for Children will be treated separately.

CAUSAL ATTRIBUTIONS AND TASK PERFORMANCE: RESULTS

Causal Attributions

The means and standard deviations for the success and failure treatment conditions are presented in Table 2. Four, three-way (2 [condition] x 3 [age] x 3 [set]) analyses of variance were carried out on the attributional factors: ability, effort, task difficulty and luck. The results of these analyses are presented in Appendix B. Tests for main effects and interactions were performed to indicate significant differences which occurred in attributions for success and failure outcomes. Figures 10 and 11 illustrate the age by group interaction for each of the four causal attributions. The significant main effects are presented in Table 3.

Ability

A significant main effect for sets, $\bar{X}$ (set 1) = 2.604; $\bar{X}$ (set 2) = 3.688; $\bar{X}$ (set 3) = 3.625; F (2, 84) = 4.578, $p < .013$ was obtained. Multiple comparisons of the set mean scores for ability revealed no significant differences across the three sets. No significant difference was found between the success and failure groups with respect to their overall mean scores for ability. Both groups indicated ability as contributing relatively the same amount to their performance (see Table 4 for overall group means). Similarly there was no significant

TABLE 2

MEANS AND STANDARD DEVIATIONS FOR ATTRIBUTION SCORES FOLLOWING EACH SET OF SUCCESS OR FAILURE FEEDBACK

		SUCCESS CONDITION							
		Ability		Effort		Task Difficulty		Luck	
		Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Age 9	Set 1	2.50	(4.63)	7.13	(2.23)	2.00	(3.25)	4.25	(3.77)
	Set 2	4.25	(3.28)	5.75	(2.92)	5.38	(3.96)	5.25	(4.50)
	Set 3	3.88	(4.36)	7.50	(1.86)	4.00	(3.70)	4.25	(3.92)
Age 11	Set 1	1.88	(2.75)	4.88	(4.19)	3.86	(3.64)	3.88	(3.44)
	Set 2	4.38	(3.62)	5.75	(3.58)	4.38	(3.29)	3.88	(4.49)
	Set 3	3.38	(3.66)	4.50	(2.56)	5.13	(2.80)	5.88	(2.30)
Age 13	Set 1	2.00	(2.33)	3.13	(1.55)	1.88	(1.96)	2.88	(1.64)
	Set 2	2.75	(2.77)	3.63	(2.07)	2.63	(1.99)	3.25	(2.19)
	Set 3	2.63	(2.77)	3.50	(1.85)	1.75	(1.91)	4.63	(1.51)

TABLE 2 (Continued)

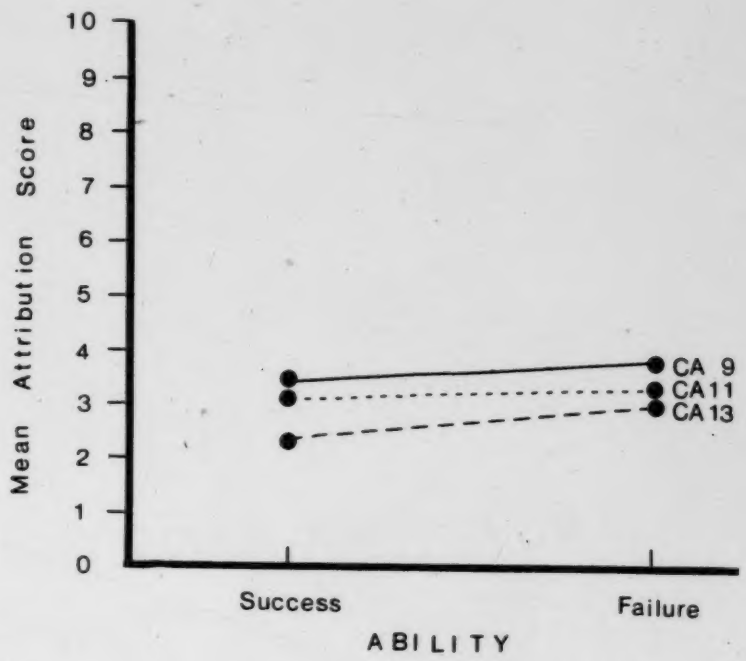
		FAILURE CONDITION							
		Ability		Effort		Task Difficulty		Luck	
		Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Age 9	Set 1	4.00	(3.29)	0.63	(1.19)	2.88	(4.52)	3.00	(2.00)
	Set 2	3.63	(3.07)	0.50	(1.41)	1.50	(1.93)	2.38	(1.85)
	Set 3	4.25	(3.73)	0.00	(0.00)	3.00	(3.74)	3.38	(3.02)
Age 11	Set 1	2.75	(1.90)	1.00	(1.93)	1.50	(1.85)	2.88	(2.59)
	Set 2	4.13	(2.9)	0.63	(1.77)	2.00	(2.27)	1.88	(1.96)
	Set 3	3.63	(2.45)	1.25	(2.32)	2.38	(2.33)	2.50	(2.27)
Age 13	Set 1	2.50	(3.02)	2.63	(2.50)	0.63	(1.19)	1.25	(1.75)
	Set 2	3.00	(2.83)	0.88	(1.81)	1.00	(1.41)	1.50	(1.69)
	Set 3	4.00	(1.69)	0.25	(0.71)	0.88	(1.81)	1.63	(2.39)

TABLE 3

SIGNIFICANT MAIN EFFECTS DERIVED FROM ANOVA
FOR 4 CAUSAL ATTRIBUTIONS

Dependent Variables	Independent Variables		
	Condition	Age	Sets
Ability	0.549	0.620	0.013**
Effort	0.001****	0.077	0.559
Task Difficulty	0.014**	0.062	0.137
Luck	0.004***	0.283	0.159

* $p \leq .05$
** $p \leq .01$
*** $p \leq .005$
**** $p \leq .001$



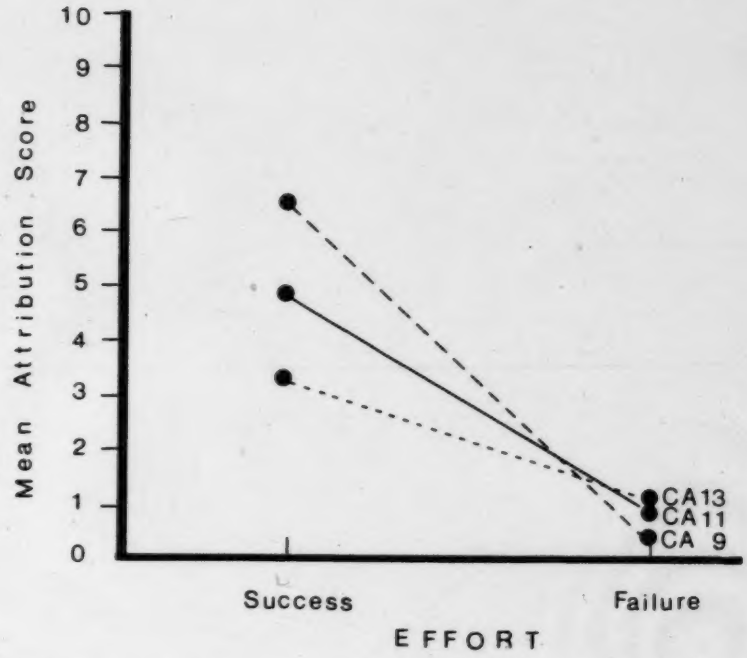


Figure 10. Mean attribution scores as a function of success and failure conditions for ability and effort

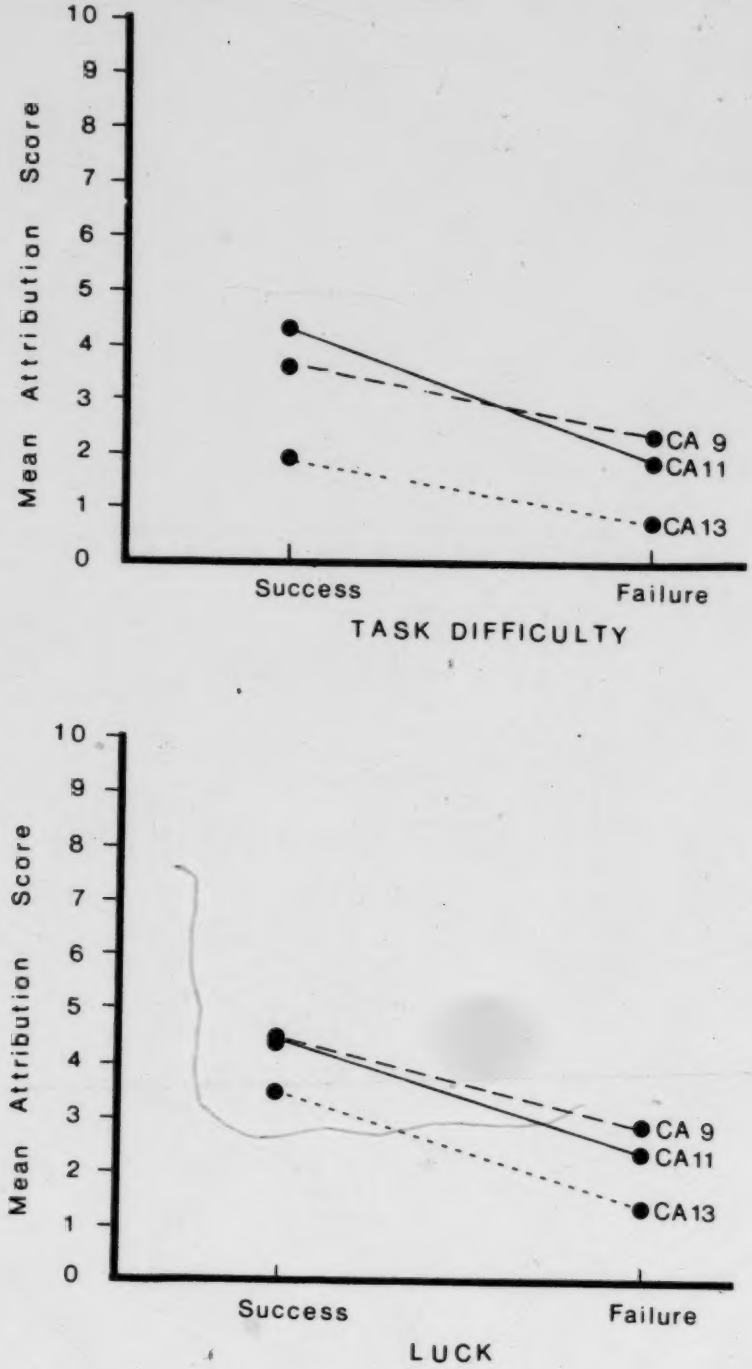


Figure 11. Mean attribution scores as a function of success and failure conditions for task difficulty and luck

difference found between the three age groups with respect to mean ability attribution scores.

TABLE 4

SUMMARY OF MEAN SCORES FOR ATTRIBUTIONS OF SUCCESS AND FAILURE GROUPS

	Ability	Effort	Task Difficulty	Luck
	Mean	Mean	Mean	Mean
Success Group	3.07	5.08	3.44	4.24
Failure Group	3.54	0.86	1.75	2.26

Effort

Results of the study indicated a significant group x age interaction for the attribution of effort, F (2, 42) = 7.914, $p < .001$ (see Figure 10). Post-hoc tests showed that the nine and eleven year old boys attributed their performance to significantly more personal effort under the success condition than under the failure condition; like the two younger groups, the thirteen year old boys attributed greater personal effort under the success condition; however, the difference between the two conditions was not significant. The above interaction qualifies the significant main effect for condition $\bar{X}$ (success) = 5.083; $\bar{X}$ (failure) = 0.861; F (1, 42) = 93.431, $p < .001$, that was found. No significant main effects were found for either age or set (see Appendix B).

Task Difficulty

As can be seen by the significant main effect for group with respect to task difficulty, $\bar{X}$ (success) = 3.444; $\bar{X}$ (failure) = 1.750; F (1, 42) = 6.551, $p < .014$, the educable mentally retarded boys who

received success feedback attributed this performance outcome to task difficulty more so than did the boys who received failure feedback. Again, there was no significant main effect with respect to the differences in attributions to task difficulty across the three ages or across sets.

Luck

The success and failure groups differed with respect to the degree to which they attributed their performance outcome to luck. This is evident due to the significant main effect for groups, $\bar{X}$ (success) = 4.236; $\bar{X}$ (failure) = 2.264; F (1, 42) = 9.105, $p < .004$ which occurred. The educable mentally retarded boys who received success feedback attributed their performance outcome to luck more so than did the boys who received failure feedback. Neither the comparison between ages or across sets demonstrated any significant differences.

The results of the analysis of variance performed on the four causal attributions demonstrate that educable mentally retarded boys attribute their successes to very different factors than they do their failures. Those boys within the success group attributed their successful performance to effort (because I tried hard), task difficulty (because it was easy), and luck (because I'm lucky). The mentally retarded boys within the failure group attributed their performance outcome to the factor of ability (because I'm not good enough). It is important to remember that there is a continuum implied in all of the attributions given. Consider, for example, the attribution of effort for the failure group. The mean attribution score for effort (because I didn't try hard) in this group was 0.86. One can logically assume from such a low mean score that the failure group in fact believed that they did try hard.

A general consideration of this continuum with respect to the attribution of effort for the failure group would suggest then that a high attribution (e.g., 10) indicates that the children believe that their performance outcome was heavily influenced by the fact that they didn't try hard. Conversely, a low attribution score (e.g., 0 or 1) for this group would imply that the children do not believe a lack of effort to have been a contributing factor to their failure outcome. The continuum is reversed for the success group. A high score for effort suggests that they believed they succeeded because they tried hard, whereas a low score implies that they believed they did not have to try hard to succeed. Similar conclusions can be drawn for all attributions because of the implied continuum. The failure group in this study would thus appear to believe that the task was in fact not hard and that they were not unlucky.

No developmental age trend was found with respect to any of the four causal attributions. Similarly, except for an unsupported main effect for ability, no significant trend in the causal attribution scores across the three sets was found to exist.

Ball Rolling Task

A four-way (2 [group] x 3 [age] x 3 [set] x 10 [trial]) analysis of variance was conducted on the three sets of performance scores for each educable mentally retarded boy, in order to investigate the possibility of a performance trend. It was thought that such a trend might exist due to the children being influenced by either success or failure feedback. The results of this analysis yielded no significance whatsoever (see Appendix B for ANOVA results). It may be assumed from this that the motor performance of the educable mentally retarded boys

was not influenced in any specific, definable manner. Neither the success nor the failure groups' performance was positively or negatively influenced by performance outcomes on previous sets of trials.

CAUSAL ATTRIBUTION AND TASK PERFORMANCE: DISCUSSION

One of the major purposes of this study was to investigate the attributions made by the different age groups of educable mentally retarded boys for their performance on a gross motor task. From this purpose, two directional questions were derived as points of departure for the investigation. This section will discuss the results pertaining to these two questions as well as the analysis of the task performance results.

1. Do educable mentally retarded boys make attributions characteristic of learned helpless individuals?

As a result of the pilot study performed on a similar group of boys as was used in the present study, more colloquial descriptions of Heider's four causal attributions were utilized. Results from the attribution box scores provide support for the first hypothesis, that subjects in the present study would demonstrate attributions similar to the educable mentally retarded boys in Gibson's (1980) study, attributions which have been described as characteristic of learned helplessness. Subjects in the success group attributed their performance primarily to their level of effort, good luck and to the ease of the task, while those in the failure group mainly attributed their performance to their lack of ability. As was suggested earlier, this attribution of ability for failure is supported by the fact that the children seemed to suggest via their other mean attribution scores that they did try hard, the task was in fact not difficult and they were not unlucky. Gibson's (1980)

subjects attributed success at the pursuit rotor task to effort and luck, and failure to a lack of ability. Thus, there exists a slight difference in the two studies results, in that the educable mentally retarded boys in this investigation also attributed success to the stable, external factor of task difficulty.

Contrary to the findings of Hoffman and Weiner (1978) and Horai and Guarnaccia (1975) that their trainable mentally retarded adult subjects exhibited attributions typical of high achievers, the attributions made by these educable mentally retarded boys are characteristic of those of low achievers (Smith, 1977). Similar findings to this study are reported by Dweck and Reppucci (1973) in that the low achievers in their investigation took far less personal responsibility for success than they did for failure. With respect to the causal attributions reported in this study in comparison to those of individuals who exhibit "normal" intelligence levels, there appears to be a very distinct difference. Frieze and Weiner (1971) found subjects in their study to attribute success primarily to the internal factors of ability and effort and failure to task difficulty and luck. Similarly, Gibson's (1980) group of normal subjects, who were matched on chronological age with mentally retarded boys, attributed success to ability and effort while failure was predominantly ascribed to a lack of effort and to a lesser extent, task difficulty. Comparative evidence such as this, along with the fact that Abramson et al. (1978) describe global learned helplessness to occur as a result of continuous internal attributions (such as ability) for failure, supports the notion that these mentally retarded children are frequently apt to exhibit the characteristics of the phenomenon of learned helplessness, especially in their experiences within the physical domain.

2. Do the older educable mentally retarded boys demonstrate a greater tendency to make attributions characteristic of learned helpless individuals than the younger boys?

The second hypothesis, derived from the second directional question, did not receive support from this study's results. No developmental trend was witnessed in any of the four causal attributions made by the educable mentally retarded boys. One possible explanation for this lack of developmental trend may be that the age span used was not large enough to result in significantly different mean attribution scores.

Wiesz (1979) utilized educable mentally retarded boys of mental ages (MA) 5.5, 7.5, and 9.5. There was however, a tremendous range in the chronological ages of these subjects. The chronological age of the MA 5.5 children ranged from 3.40 to 12.75, the MA 7.5 from 5.30 to 16.00 and the MA 9.5 ranged from 6.50 to 19.40. Wiesz's (1979) results demonstrated that the upper MA level children were significantly more helpless than the lower MA level children. The difference between these two age levels however, in terms of chronological age, ranged from 3.40 to 19.40. Another possible explanation for the lack of significant trend could be that there were not enough age groups used to identify such a trend. Rholes et al. (1980) demonstrated a developmental trend in helplessness tendencies using "normal" children within four chronological age levels of 5.9, 7.1, 8.7, and 10.9.

An interesting trend which did occur in the results of this study was that the thirteen year old boys in both the success and failure groups had the lowest mean scores for all four causal attributions, with the exception of the failure group on effort (see Figures 10 and 11). A search of relevant literature provided no theoretical solution for such a trend. Further research of a similar nature is required to

determine whether this is in fact a common trend. It may be that this trend is specific to this particular group of children, as the majority of the thirteen year olds did actually come from the same school.

The fact that there was virtually no significant trend in the ball rolling task scores across the three sets of trials is of no great surprise. As was mentioned earlier, this skill was made quite difficult in order that the situation would not arise where a child in the failure group had obviously succeeded. Thus, the variability in performance across trials was extremely high. One would not expect a series of failure or success experiences to have any significant trend effect on subsequent performance levels until the subject had demonstrated some degree of consistency of performance. Only at this point could these positive or negative experiences in turn have a consistent effect on performance.

SUBJECTIVE QUESTIONNAIRE: RESULTS AND DISCUSSION

The purpose in including these four questions within this study was to utilize an informal discussion approach to hopefully gain further information as to the subjects' attitudes towards their own performance on the ball rolling task. In essence, this was purely an exploratory attempt at gathering attribution related information in a more open, subjective manner. Unfortunately, the experimentor found the majority of the subjects unable to express their feelings towards the questions asked much beyond a one or two word answer. A description of why they gave a particular answer to a question seemed to be too abstract a task for the majority of the children. Even in the case of the thirteen year old boys, most did not seem comfortable in explaining to the experimentor the reasons for their specific answers. These difficulties encountered

may lend support for the use of apparatus such as the "Attribution Box", which stimulate certain causal attributions for performance, in dealing with a population such as the mentally retarded. The information gained via each question is presented in the form of percentages of children in either the success or failure group (summed over all the ages) to reply to each question with a certain answer. Each of the four questions within the subjective questionnaire are considered separately within this section.

Question 1. Is this an easy task?

The results indicate that within the success group, 79% of the boys said that the ball rolling task was easy, while 21% found the task hard. With respect to the failure group, 38% of the boys indicated the task as being easy, while 62% said that it was hard.

Interestingly, the failure group's responses to this question do not seem to agree with their mean attribution score for task difficulty in phase 2 of this study. In fact, when asked whether their failure was due to the difficulty of the task in phase 2, most of the children responded that the task was in fact not that hard at all. One possible explanation for this contradiction in results is that the combined effect of the successive failure experiences may have led to the majority of the failure group finally having described the task as difficult during phase 3 of the study. However, no such significant trend was seen in the attribution scores from phase 2. Another possible explanation which may account for this contradiction is that the children did not consider the question of the difficulty of the task in the subjective questionnaire in the same context as they did their causal attributions for performance. The present question under study simply referred to

whether the task was difficult or not. It did not make any reference to the task's level of difficulty as a reason for performance outcome. Thus, the children may have viewed the task as difficult, yet not considered this a major reason for their failure. The results of the success group are similar to earlier mean attribution scores for success to task difficulty which have already been discussed.

Question 2. Do you think if you tried this task again you would succeed or fail?

When asked whether they would succeed or fail at the task if given another try on a different day, 88% of the success group indicated that they would again succeed, while 12% indicated that they would fail. Within the failure group, 71% of the boys said that they would succeed and 29% decided that they would still fail at the ball rolling task.

This question was constructed in an attempt to discern whether the initial success or failure experiences would have any lasting influences on the educable mentally retarded boys. Specifically, it was of interest to determine whether the failure experiences had what Abramson et al. (1978) describe as chronic versus transient effects. It appears that the majority of the educable mentally retarded boys felt that they could succeed at the task, given another chance. This would suggest that any effects the failure may have had on the boys were transient or short lived. In fact, the majority of the boys did appear quite optimistic about their chances of future success. It would seem evident, if one considers Seligman's (1975) suggestion that learned helplessness develops after a series of uncontrollable experiences, that the development of chronic effects from failure experiences on a skill performance such as the ball rolling task would only occur after quite a number of unsuccessful

attempts over an extended period of time. Three sets of failure experiences, over a period of 10 to 15 minutes is obviously not sufficient enough to illicit tendencies towards chronic learned helplessness.

One might speculate however, that those boys who did indicate that they would fail if given another chance at the task, may in fact be prone to chronic effects because of previous failure experiences in the motor domain. Abramson et al. (1978) describe global learned helplessness as the existence of helplessness deficits over a broad range of situations. Such deficits occur due to continuous attributions for poor performance to internal factors such as ability. It has already been established that a lack of ability was the most frequent attribution within the failure group of this study. It is possible that the mentally retarded boys who indicated that they would fail on a subsequent attempt, did so because of already existing tendencies towards global learned helplessness.

Question 3. Do you think your friends or classmates would succeed or fail at this task?

In speculating on how their friends or classmates would perform at the ball rolling task, 88% of the boys in the success group said that their friends would succeed and 12% indicated that they would fail. Of the failure group, 42% suggested that their friends would succeed while 58% postulated that they would fail.

Both question 3 and question 4 were included to determine the extent to which the educable mentally retarded boys considered their performance outcomes to be personal or universal in nature (Abramson et al., 1978). A small majority of the boys within the failure group indicated that their friends would fail, thus intimating that failure at the task would

be quite universal. This attitude coincides with that of the majority of the boys in question 1 who indicated that the task was indeed a difficult one. However, the fact that 42% of the subjects suggested that their friends would succeed cannot be discounted. It would appear that these boys may consider their plight to be personal in nature. Abramson et al. (1978) suggest that personal helplessness occurs when an individual believes there exists responses that would contingently produce the desired outcome, but that he or she is not capable of such a response. Obviously one can only speculate as to the existence of both universal and personal learned helplessness within this specific population. It is however, important to recognize the possibility of either being exhibited by the mentally retarded boys. Question 4 provides further support for this line of reasoning.

Also of interest within this question is the fact that the vast majority of boys in the success group indicated that their friends would succeed. This result would seem to agree not only with the answers given by the success group in question 1, in that the task was described as easy, but also appears to support the strong causal attribution to the ease of the task given in phase 2 of this study which was discussed earlier.

Question 4. Do you think your friends would do better than you, worse than you, or the same as you?

When asked the above question, 38% of the success group said better, 8% indicated their friends would do worse and 54% suggested that they would perform the same. Within the failure group, 46% indicated better, 8% said their friends would do worse and 46% postulated that they would do the same. If one combines the 38% of the success group, and 46% of

the failure group who indicated that their friends would do better than them at the ball rolling task, it becomes evident that of the 48 subjects in this study, 20 of the boys indicated that their friends would do better than them at the ball rolling task. This is quite a substantial number. Only 4 of the 48 educable mentally retarded subjects indicated that their friends would fare worse than them at the required task. These results lend support to the notion that a number of the educable mentally retarded boys may be prone to a helpless orientation which is personal in nature.

THE PERCEIVED COMPETENCE SCALE FOR CHILDREN: RESULTS

Table 5 presents the means and standard deviations for each of the three age groups subscale scores. The results in Table 5 were visually compared to similar results of Harter's (1982) which examined the perceived competencies of "normal" children. The results of Harter's (1982) study are presented in Table 6. Age group differences within the present study were examined using 4, one-way analyses of variance, with the cognitive, social, physical and general subscale scores serving as dependent variables. Results of these analyses are presented in Appendix B.

TABLE 5

MEAN SUBSCALE SCORES AND STANDARD DEVIATIONS

	Cognitive Competence		Social Competence		Physical Competence		General Self-Esteem	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Age 9	2.92	(0.56)	3.12	(0.44)	2.70	(0.57)	3.15	(0.54)
Age 11	2.86	(0.57)	2.87	(0.52)	2.38	(0.60)	2.60	(0.51)
Age 13	2.27	(0.60)	2.90	(0.54)	2.58	(0.54)	2.90	(0.64)

TABLE 6

MEAN SUBSCALE SCORES AND STANDARD DEVIATIONS
BY GRADE FOR FOUR SAMPLES[1]

Competence and Sample[2]	Grade 3		Grade 5		Grade 7	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Cognitive:						
1	3.0	.58	2.7	.70	2.6	.63
2	2.8	.59	2.7	.53	2.8	.58
3	2.9	.64	3.0	.55	...	...
4	...	...	2.9	.60	...	...
Social:						
1	2.9	.59	3.0	.66	2.7	.61
2	2.9	.71	2.7	.69	3.0	.68
3	3.0	.63	3.0	.66	...	...
4	...	...	2.9	.65	...	...
Physical:						
1	2.8	.63	2.8	.62	2.6	.66
2	2.8	.72	2.7	.65	2.8	.68
3	2.8	.66	2.9	.79	...	...
4	...	...	2.8	.69	...	...
General:						
1	3.0	.59	2.8	.63	2.6	...
2	3.1	.61	2.8	.64	2.9	...
3	3.0	.61	3.0	.62	...	...
4	...	...	2.9	.61	...	...

Note [1]. Results from Harter's study for grades 4, 6, 8, and 9 have not been included in this table.

Note [2]. 1 = California, N = 746; 2 = Colorado, N = 296; 3 = Connecticut and California, N = 341; 4 = New York, N = 714.

(Source: Harter, 1982, p. 93)

Post-hoc tests on the significant main effects were performed to indicate significant differences between specific age groups. Significant main effects are presented in Table 7.

TABLE 7

SIGNIFICANT MAIN EFFECTS DERIVED FROM ANOVA FOR 4 PERCEIVED COMPETENCE SUBSCALES

	Dependent Variables			
Independent Variable	Cognitive Competence	Social Competence	Physical Competence	General Self-Esteem
Age	0.004**	0.319	0.291	0.0321*

* $p < .05$
** $p < .005$

Comparison of Data to Harter (1982) Norms

Visual comparison of the present study's results to those of Harter (1982) demonstrated remarkable similarities in both investigations' mean subscale scores. The majority of the mean subscale scores for each age group in the present study were generally no more than 0.1 to 0.2 points on either side of the mean subscale scores of Harter's (1982) "normal" subjects. Similarly the standard deviations of the subscale scores for both were highly similar. Because of the similarities observed via visual comparison, no further analysis to determine differences between the two sets of data was undertaken.

Age Differences on Mean Subscale Scores

The mean subscale scores for each age group are plotted in Figure 12.

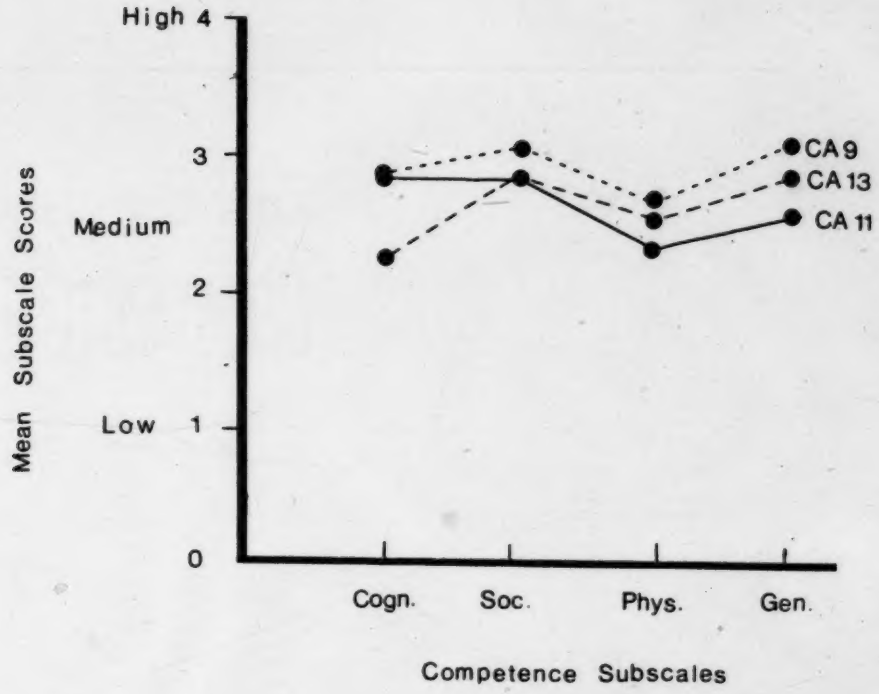


Figure 12. Mean competence subscale scores for each age group

Cognitive Competence

A significant main effect for age, F (2, 45) = 6.251, $p < .004$, was obtained for the cognitive scale. Multiple comparisons indicated the largest significant difference in the cognitive subscale scores to be between the nine and thirteen year old boys. A significant difference was also revealed between the eleven and thirteen year old boys. There was no significant difference found between the nine year old boys and the eleven year old boys. These results reflect a trend in that the older educable mentally retarded boys exhibit lower perceived competence in the cognitive domain than the younger boys.

Social Competence

The analysis of social subscale scores by age did not result in any significant main effect. Thus, it must be assumed that no significant differences between the three ages occurred with respect to the social mean subscale scores.

Physical Competence

As occurred in the social subscale, no significant main effect was observed in the physical subscale. Again, this indicates that no significant differences existed between the three age groups on this subscale.

General Self-Esteem

The one-way analysis of variance performed on the general subscale scores resulted in a significant main effect, F (2, 45) = 3.717, $p < .032$. Post-hoc analysis indicated a significant difference between the nine and eleven year old educable mentally retarded boys. Comparisons between the nine and thirteen year olds and the eleven and thirteen year old boys resulted in no significant differences being exhibited.

THE PERCEIVED COMPETENCE SCALE FOR CHILDREN: DISCUSSION

The following section will discuss the third and fourth directional questions outlined in Chapter I which pertain to the results of the Perceived Competence Scale.

3. Do the educable mentally retarded boys demonstrate lower scores on The Perceived Competence Scale for Children than the "normal" children tested by Harter (1982)?

The results from the Perceived Competence Scale do not support the relationship postulated in the third hypothesis. Very little difference was found between the mean subscale scores of the two investigations. One very noticeable difficulty that the subjects within this study had was in associating themselves and their own competencies with an individual described in each statement. It was very often evident to the tester that the subject was not trying to decide what boy he was most like, but rather, was choosing the boy which he would most like to be similar to. Though Harter's (1982) "structured alternative format" was devised so as to minimize the child's susceptibility to social desirability response tendencies, this may have been one of the reasons for the similarity of the two studies' results. Despite the experimentor's constant attempts to discourage these types of responses through reminders such as "this is not a test, there are no right or wrong answers", it was obvious at times that children were indeed giving the socially desirable response. This explanation would seem to be quite a plausible interpretation of these results, especially when one considers the integrated environment the majority of these children exist in. Though it is true they may not, in many cases be integrated in all settings, the overall influence of peer interaction on all children, both within and

outside school, with respect to all domains cannot be emphasized enough. It is important to consider however, that the choice of a socially desirable response may have resulted more from a lack of understanding of the questionnaire itself, than from a desire to be like "all the other kids". As was pointed out, it often appeared that the educable mentally retarded subjects did not understand the concept of associating their competencies with one of the children described in the scale. Though the tester went to great lengths to explain the workings of the scale it is possible that a number of the subjects still did not understand it.

Further to this line of thinking, Silon (1980) identified a two factor structure in the responses of the 126 mentally retarded children ages 9 through 12. The two factors were labelled competence (cognitive and physical) and popularity (social). No evidence was found for a general self-worth scale. Harter (1982) reported that a similar pattern emerged in testing 4 to 7 year old children on a pictorial version of the competence scale. From these two sets of results it was suggested that the perceived competence construct is qualitatively different at different developmental levels. If indeed there does exist different levels of perceived competence, one would suspect that a child who is not developmentally capable of making a competence evaluation at a certain level, but whom is forced to do so, would tend to choose the culturally normative, socially desirable representation of him or herself. The educable mentally retarded children within this study may well fit this description.

4. Do the older educable mentally retarded boys exhibit significantly lower Perceived Competence Scale scores on all scales as compared

to the younger boys?

The fourth hypothesis was partially supported by the evidence of a developmental trend within the cognitive subscale. The results of this subscale showed the thirteen year old cognitive subscale scores to be significantly lower than the eleven and nine year old boys' scores. The only other scale to register any significant difference between ages was the general self-esteem scale which found the nine year old educable mentally retarded boys to be significantly different from the eleven year olds. This however, cannot be described as a developmental trend.

As has already been discussed, the competence scores of the educable mentally retarded boys in the present study showed remarkable similarity to those scores reported by Harter (1982). Because of this similarity in competence scores, the existence of a developmental trend would logically seem to be very unlikely, given that no such trend existed in Harter's children. A comparison between the results shown in Table 5 and Table 6 illustrates the fact that the mean competence score of the thirteen year old boys in this study, within the cognitive domain, is one of the few to show any marked difference from comparative scores reported by Harter (1982). This visible difference in the thirteen year old scores seems to account for the occurrence of the developmental trend in the cognitive scale scores.

Harter (1982), in comparing actual competence scores of children (from The Teacher Rating Scale for Child's Actual Competence scores) to the children's perceived competence scores, found a trend to exist in that the children's perceived competence scores converged towards their actual competence scores with an increase in age. If the mentally retarded boys in this study do in fact believe themselves to be lacking in overall competence as was postulated, one would expect that a

decrease in their competence scores would start to become visible in the older group of thirteen year old boys. This however, was only found in the cognitive scores, which may suggest that this trend towards more accurate perceived competence scores was undermined by the educable mentally retarded children's desire to give socially acceptable responses.

Since research to date within the area of perceived competence has neither supported nor refuted the notion of a developmental trend, any explanation for the present results is purely speculative in nature. Harter (1982) reported the social and physical subscales to be highly correlated. She suggested that this strong correlation between the two scales supported the fact that physical prowess with respect to sport is a very socially desired trait in children. The results of Harter's (1982) study also found very little correlation between the cognitive competence scale and the social and physical competence scales, suggesting that cognitive competence is less valued amongst children within this age range. One could surmise from the relationship between these three competence scales reported by Harter (1982) that it would be far more socially unacceptable to admit to a lack of competence in the physical and social domains than it would in the cognitive domain. It was earlier suggested that the similarity between the perceived competence of the "normal" children and the mentally retarded may exist because of the latter group's tendency to choose the socially desirable statement. Thus, even though a mentally retarded child may in fact believe himself to lack competence in all three domains, he may tend to admit to a lack of competence only with respect to the cognitive domain.

A similar explanation may be feasible in accounting for the lack of a developmental trend within the general self-esteem scale. Silon (1980) found no evidence for the existence of a general self-worth factor in his

study. From these results he suggested that at the particular IQ and mental age level of the children tested, the type of abstract evaluation of self which is tapped by the general self-esteem items does not exist. If these children are however required to answer such questions it would seem logical that they would select the most socially desirable items. Thus, one would not expect to see a marked difference across the three ages. In fact, as can be seen in Table 5, though the nine year olds are significantly higher than the eleven year olds on this scale, there is a non significant increase in the mean scores from the eleven to the thirteen year old boys, suggesting that no true developmental trend occurred within this scale.

A similar non significant trend in scores is also evident in the physical and social subscales, in that the highest scores were recorded by the nine year olds, the middle scores by the thirteen year olds and the lowest scores by the eleven year olds in all three scales. No plausible explanation can be found for such a trend. Hopefully further research in this area with the mentally retarded will provide an answer for this curious trend.

Finally, a very different explanation for the results pertaining to questions 3 and 4 may quite possibly be that the educable mentally retarded boys in this study do truly believe themselves to possess the competence which they expressed themselves to have via The Perceived Competence Scale for Children. It is important to remember that this scale is designed to tap children's <u>perceptions</u> of their competence in the four domains, not their actual competencies.

GENERAL DISCUSSION

The present study was initiated out of an interest in the differential effects that success and failure experiences have on the mentally retarded child's motivation to perform and their perceived competence levels. The results with respect to the causal attributions made by the educable mentally retarded boys for their success or failure at a motor task indicate these boys to exhibit characteristics of low achievers (Smith, 1977). A comparison between the perceived competence scores of the educable mentally retarded boys in the present study to similar competence scores of "normal" children reported by Harter (1982) showed the two sets of results to be very similar. It would appear that the results of these two different phases of the present study are quite contradictory. It is indeed curious that a group of individuals who initially describe their competencies in the cognitive, social and physical domains, as well as their general self-esteem as average to above average, would later make attributions for their performance at a ball task characteristic of low achievers. The reason for these contradictory findings may however lie in the subject's level of understanding of the two different tasks.

Gibson (1980) found the educable mentally retarded boys in his study to be capable of making causal attributions for their performance on a pursuit rotor task. The results of this study, which replicate Gibson's findings, also indicate that the educable mentally retarded boys tested were capable of associating their performance on the ball rolling task with the causal attributions they were exposed to via the attribution box. It is questionable however whether the subjects truly understood the Perceived Competence Scale. It has been suggested that these mentally retarded subjects may have tended to give socially desirable

responses rather than descriptions of their actual perceived competence scores in that the boys may not have truly believed themselves to be of the competence levels they indicated. The occurrence of this contradiction is important in that it introduces a very interesting question with respect to perceived competence. How realistic does one want children to be about their competencies in different domains? Strong consideration must be given to the negative effects of forcing a child, who obviously lacks competence, to be realistic about his or her abilities. To a certain extent it would seem desirable for children to be somewhat unrealistic about their abilities in order that they do not develop tendencies towards helplessness, such as were reported in this study.

CHAPTER V

CONCLUSIONS, APPLICATIONS AND RECOMMENDATIONS

CONCLUSIONS

As a result of the findings of this study a number of conclusions may be cited which either lend support to or refute the ideas put forward via the directional questions in Chapter III. It has been established that the educable mentally retarded boys in this study made attributions for their performance at the ball rolling task characteristic of low achievers (Smith, 1977) and exemplary of individuals prone to learned helplessness (Abramson et al., 1978). These results support the findings of Gibson (1980) who found educable mentally retarded boys to attribute their failures at a motor task to ability and their successes to effort and luck. Unlike Gibson's subjects however, the boys in the present study also attributed their successes to task difficulty.

Contradictory to the findings of Wiesz (1979), there is no evidence within the present investigation to support the notion of a developmental trend in learned helplessness with respect to mentally retarded children. In retrospect, it would appear that a number of methodological problems may have contributed to this lack of trend. It is quite possible that by increasing the number of age groups, or the span between each age group, a developmental trend might be seen. Further investigation is merited in order to determine whether these results are in fact due to the problems cited earlier or whether there is indeed no true developmental trend in learned helplessness.

A comparison of the results of The Perceived Competence Scale for Children from the present study to those of Harter (1982) revealed remarkable similarities in the majority of mean subscale scores for each

age group. It must be concluded in this instance that there is no measurable difference between the mentally retarded boys in this study and the normal children in Harter's study with respect to perceived competence. Because of the lack of research evidence available, it is difficult to establish whether these results are due to the mentally retarded children's susceptibility to social desirability response tendencies as was postulated earlier, or if they are in fact truly representative of the perceived competence of these children.

A developmental trend was witnessed in the cognitive competence scores of the mentally retarded boys in this study, in that there was a decrease from the 9 to 13 year olds and 11 to 13 year old boys. It cannot be concluded from this however, that a developmental trend exists in perceived competence with respect to the mentally retarded child. No such trend was found in any of the other three subscales within The Perceived Competence Scale for Children. Again, because of the lack of research evidence in this area of perceived competence one can only speculate as to the reasons for the results of the present study. Further research must be conducted in order to establish whether this scale is a suitable instrument to use with mentally retarded children.

Finally, the use of a brief subjective questionnaire to gain further information on the subjects' attitudes towards their performance on the ball rolling task met with moderate success. The information gleaned from these four questions provided some support for the existence of the phenomenon learned helplessness in a number of the educable mentally retarded boys in this study. More extensive research using this information gathering technique is needed so as to establish whether the lack of response to questions by a number of the children was due to an inability in these children to verbally describe attitudes

towards their own performance or simply to a hesitancy on their part.

APPLICATIONS AND RECOMMENDATIONS

This study has incorporated the psychological phenomena of attribution theory, learned helplessness and perceived competence in an attempt to understand mentally retarded boys' attitudes towards their motor performance, as well as to their competencies in different domains. Unfortunately the findings may only be generalized to groups of the same sex, age and IQ range. Further, the data of this study is limited in that it is the result of experimental conditions rather than naturalistic observation.

The implications for teaching and coaching, as a result of the support found for the first hypothesis in this study, are of crucial importance. North American culture is firmly entrenched in the philosophy that competition is healthy. Unfortunately, it is because of attitudes such as this, which make no allowances for those individuals who do not measure up to normal performance standards, that phenomena such as learned helplessness develop. Teachers and coaches must be made aware of the detrimental effects which continuous failure experiences may have on populations such as the mentally retarded. Obviously, it is not possible to protect such children from all failure experiences, nor should one want to. It is the right of every individual to both succeed and fail. However, it is possible to provide these individuals with experiences in the physical domain which, to a large extent, their abilities allow them to cope with.

The results of a recent study conducted by Wiesz (1981b) supported the notion that adults often interpret failure by the retarded child in ways that lead them to condone helplessness. In essence this study

found that because adults attribute failure of mentally retarded children to a lack of ability, they are less likely to urge these children to persist in the face of failure. As was suggested by Nicholls (1978:811) with respect to intellectual skills, "we must accept individual differences in achievement, but we must also seek to maintain motivation in all children not just the high achievers". Similar allowances must be made in the physical domain with respect to both high and low achievers. Society is continually striving to provide the best possible competitive experiences for its gifted athletes. The same attempts must be made to engage low achievers in activities within an atmosphere conducive to their abilities. From the results of this study, several implications for future research are suggested.

The results of the present study are far from conclusive with respect to the notion of a developmental trend in learned helplessness in mentally retarded children. Further experimentation employing the same procedures as were utilized in the present investigation, using an increased number of age groups and a larger span between these groups might provide more conclusive evidence as to the existence of such a trend. Secondly, additional research must be conducted with regard to the perceived competence of mentally retarded children. The initial focus of such research should be to establish whether in fact this is a viable scale for use with this population. A possible direction could be to utilize both the pictorial version and the written version of the competence scale with normal and mentally retarded children. A comparison of the two scales results for both groups could provide important information with respect to this initial question.

A final direction which is suggested for future research regards employing additional methods of gaining information with respect to

children's attitudes towards their performance. A more extensive questionnaire might be devised to tap these attitudes following performance, than was utilized in the present study. It is possible, however, that this method is not conducive to the population under study. It may be more productive to gain subjective information via the recording of spontaneous verbalizations during performance and through unobtrusive videotape observations of the children's facial expressions while coping with success and failure experiences. Similarly, observations in a naturalistic setting may provide a greater number of uninhibited attributional responses to performance outcomes. In conclusion it is hoped that future research will continue to explore the far reaching effects which motivational deficits may have on the motor performance of mentally retarded children.

REFERENCES

Abramson, L.Y. and Seligman, M.E.P. Learned helplessness in humans: Critique and reformulation. Journal of Abnormal Psychology, 1978, 87, 49-74.

Buttler, R.A. Exploratory and related behaviour: A new trend in animal research. Journal of Individual Psychology, 1958, 14, 111-120.

Coopersmith, S. The antecedents of self-esteem. San Francisco: W.H. Freeman, 1967.

Crandall, C.V., Katkovsky, W., and Crandall, V.J. Children's beliefs in their own control of reinforcements in intellectual achivement situations. Child Development, 1965, 36, 91-109.

Cromwell, R.L. A social learning approach to mental retardation. In N.R. Ellis (Ed.), Handbook of mental retardation. New York: McGraw-Hill, 1963.

Diener, C.J. and Dweck, C.S. An analysis of learned helplessness: Continuous changes in performance, strategy and achievement cognitions following failure. Journal of Personality and Social Psychology, 1978, 36, 451-462.

Dweck, C.S. and Reppucci, N.D. Learned helplessness and reinforcement responsibility in children. Journal of Personality and Social Psychology, 1973, 25, 109-116.

Dweck, C.S. The role of expectations and attribution in the alleviation of learned helplessness. Journal of Personality and Social Psychology, 1975, 31, 674-685.

Dweck, C.S. and Bush, E.S. Sex differences in learned helplessness I. Developmental Psychology, 1976, 12, 147-156.

Feather, N.T. and Simon, J.C. Causal attributions for success and failure in relation to expectations of success based upon selective or manipulative control. Journal of Personality, 1971, 39. 527-554.

Fitch, G. Effects of self-esteem, perceived performance and choice on causal attributions. Journal of Personality and Social Psychology, 1970, 16, 311-315.

Floor, L. and Rosen, M. Investigating the phenomenon of helplessness in mentally retarded adults. American Journal of Mental Deficiency, 1975, 79, 565-572.

Frieze, I.H. and Snyder, H.N. Children's beliefs about the causes of success and failure in school settings. Journal of Educational Psychology, 1980, 72, 186-196.

Frieze, I.H. Studies of information processing and the attribution process. Unpublished doctoral dissertation, University of California, Los Angeles, 1973.

Frieze, I.H. and Weiner, B. Cue utilization and attributional judgements for success and failure. Journal of Personality, 1971, 39, 591-606.

Freud, S. An outline of psycho-analysis (Trans. by J. Strachey). New York: Norton, 1949.

Gessell, A. and Ilg, F.L. Infant and child in the culture of today. New York: Harper, 1943.

Gibson, B. An attributional analysis of performance outcomes and the alleviation of learned helplessness on the motor performance tasks: A comparative study of educable mentally retarded and non-retarded boys. Unpublished doctoral dissertation, University of Alberta, Edmonton, 1980.

Gruen, G. and Zigler, E. Expectancy of success of the probability learning of middle class, lower class, and retarded children. Journal of Abnormal Psychology, 1968, 73, 353-357.

Harlow, H.F. Mice, monkeys, men and motives. Psychological Review, 1953, 60, 23-32.

Harter, S. The perceived competence scale for children. Child Development, 1982, 53, 87-97.

Harter, S. Aspects of the development of competence. The Minnesota symposia on child psychology. Vol. 14 (Ed.) W. Andrew Colins. New Jersey: Lawrence Erlbaum Assoc., Publ., 1981.

Harter, S. The development of competence motivation in the mastery of cognitive and physical skills: Is there still a place for joy? Psychology of Motor Behaviour and Sport, 1980, 3-29.

Harter, S. Effectance motivation reconsidered. Toward a developmental model. Human Development, 1978a, 21, 34-64.

Harter, S. Pleasure derived from optimal challenge and the effects of extrinsic rewards on children's difficulty level choices. Child Development, 1978b, 49, 788-799.

Harter, S. The effects of social reinforcement and task difficulty on the pleasure derived by normal and retarded children from cognitive challenge and mastery. Journal of Experimental Child Psychology, 1977, 24, 476-494.

Harter, S. Mastery motivation and need for approval in older children and their relationship to social desirability response tendencies. Developmental Psychology, Developmental Psychology, 1975a, 11, 186-196.

Harter, S. Developmental differences in the manifestation of mastery motivation and problem solving tasks. Child Development, 1975b, 46, 370-378.

Harter, S. Pleasure derived from cognitive challenge and mastery. Child Development, 1974, 45, 661-669.

Harter, S. and Zigler, E. The assessment of effectance motivation in normal and retarded children. Developmental Psychology, 1974, 10, 169-180.

Harter, S., Shultz, T.R., and Blum, B. Smiling in children as a function of their sense of mastery. Journal of Experimental Child Psychology, 1971, 12, 396-404.

Heider, F. The psychology of interpersonal relations. New York: Wiley, 1958.

Henrick, I. Instinct and ego during infancy. Psychoanalytical Quarterly, 1943, 11, 33-58.

Hill, W.F. Activity as an autonomous drive. Journal of Comparative and Physiological Psychology, 1956, 49, 15-19.

Hiroto, D.S. Locus of control and learned helplessness. Journal of Experimental Psychology, 1974, 102, 187-193.

Hiroto, D.S. and Seligman, M.E.P. Generality of learned helplessness in man. Journal of Personality and Social Psychology, 1975, 31, 311-327.

Hoffman, J. and Weiner, B. Effects of attributions for success and failure on the performance of retarded adults. American Journal of Mental Deficiency, 1978, 82, 449-452.

Horai, J. and Guarnaccia, V.J. Performance and attributions to ability, effort, task difficulty and luck of retarded adults after success or failure feedback. American Journal of Mental Deficiency, 1975, 79, 690-694.

Jones, E.E. and Davis, K.E. From acts to dispositions: The attribution process in person perception. In L. Berkowitz (Ed.), Advances in experimental social psychology (vol. 2). New York: Academic Press, 1965.

Kagan, J. and Berkeen, M. The reward value of running activity. Journal of Comparative and Physiological Psychology, 1954, 47, 108.

Karabenick, J.D. and Heller, K.A. A developmental study of effort and ability attributions. Developmental Psychology, 1976, 12, 559-560.

Kelley, H.H. Causal schemata and the attribution process. New York: General Learning Press, 1972.

Kelley, H.H. Attribution in social interaction. New York: General Learning Press, Module Series, 1971.

Kelley, H.H. Attribution theory in social psychology. In David Levine (Ed.), Nebraska symposium on motivation. Vol. 15. Lincoln: University of Nebraska Press, 1967.

Klein, D.C., Fencil-Morse, E., and Seligman, M.E.P. Learned helplessness, depression, and the attribution of failure. Journal of Personality and Social Psychology, 1976, 33, 508-516.

Kukla, A. Cognitive determinants of achievement behaviour. Unpublished doctoral dissertation, University of California, Los Angeles, 1970.

Kukla, A. Development of the magnitude-covariation and compensation schemata in ability and effort attributions of performance. Child Development, 1977, 48, 862-873.

Lanzetta, J.T. and Hannah, T.E. Reinforcing behaviour of "naive" trainers. Journal of Personality and Social Psychology, 1969, 11, 245-252.

Lubinbuhl, J.R., Crowe, D.H., and Kahan, J.P. Causal attributions for success and failure. Journal of Personality and Social Psychology, 1975, 31, 86-93.

McMahan, I.D. Relationships between causal attributions and expectancies of success. Journal of Personality and Social Psychology, 1973, 28, 108-114.

Nicholls, J.G. The development of the concepts of effort and ability, perception of attainment, and the understanding that difficult tasks require more ability. Child Development, 1978, 49, 800-814.

Nicholls, J.G. Causal attributions and other achievement related cognitions: Effects of task outcome, attainment value and sex. Journal of Personality and Social Psychology, 1975, 31, 379-389.

Ollendick, T., Balla, D., and Zigler, E. Expectancy of success and the probability learning of retarded children. Journal of Abnormal Psychology, 1971, 77, 275-281.

Overmier, J.B. and Seligman, M.E.P. Effects of inescapable shock upon subsequent escape and avoidance responding. Journal of Comparative and Physiological Psychology, 1967, 63, 28-33.

Piaget, J. The origins of intelligence in children. New York: International University Press, 1965.

Raber, S. and Wiesz, J.R. Teacher feedback to retarded and non-retarded children. American Journal of Mental Deficiency, 1981, 86, 148-156.

Rholes, W.S., Blackwell, J., Jordan, C., and Walters, C. A developmental study of learned helplessness. Developmental Psychology, 1980, 16, 616-624.

Richter, C.P. On the phenomenon of sudden death in animals and man. Psychosomatic Medicine, 1957, 19, 191.

Rosenbaum, R.M. A dimensional analysis of the perceived causes of success and failure. Unpublished doctoral dissertation, University of California, Los Angeles, 1972.

Rotter, J.B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80, 1-28.

Seligman, M.E.P. Helplessness: On depression, development and death. San Francisco: W.H. Freeman and Company, 1975.

Seligman, M.E.P. and Maier, S.F. Failure to escape traumatic shock. Journal of Experimental Psychology, 1967, 74, 1-9.

Seligman, M.E.P., Maier, S.F., and Geer, J.H. Alleviation of learned helplessness in the dog. Journal of Abnormal and Social Psychology, 1968, 73, 256-262.

Shaver, K.G. An introduction to attribution processes. Cambridge: Winthrop Publishers, Inc., 1975.

Silon, E. Perceived competence, anxiety, and motivational orientation in educable retarded children who are mainstreamed compared to those in self contained classrooms. Unpublished doctoral dissertation, University of Denver, 1980.

Smith, N. Attribution, achievement motivation and task difficulty in physical education. Paper presented at the Third Annual B.C. Conference on Teaching of Physical Education, Victoria, 1977.

Stevenson, H.W. and Zigler, E. Probability learning in children. Journal of Experimental Psychology, 1958, 56, 185-192.

Surber, C.F. The development of reversibility operations in judgements of ability, effort and performance. Child Development, 1980, 51, 1018-1029.

Thorton, J.W. and Jacobs, P.D. Learned helplessness in human subjects. Journal of Experimental Psychology, 1971, 87, 369-372.

Trope, Y. Seeking information about one's own ability as a determinant of choice among tasks. Journal of Personality and Social Psychology, 1975, 32, 1004-1013.

Wall, A.E. The reciprocal tapping of educable mentally retarded boys. Unpublished doctoral dissertation, University of Alberta, 1978.

Wall, A.E. Physically awkward children: A motor developmental perspective. In J.P. Das, R.F. Mulcahy and A.E. Wall (Eds.), Theory and research in learning disabilities. New York: Plenum Press, 1982.

Weiner, B. Human motivation. New York: Holt, Rinehart and Winston, 1980.

Weiner, B. and Lutman-Adizes, J. An attributional expectancy-value analysis of learned helplessness and depression. In J. Garber and M.E.P. Seligman (Eds.), Human helplessness: Theory and application. New York: Academic Press, 1980.

Weiner, B., Russell, D., and Lerman, D. Affective consequences of causal ascriptions. In J.H. Harvey, W. Ickles and R.F. Kidd (Eds.), New directions in attribution research (Vol. II). New York: John Wiley and Sons, 1978.

Weiner, B., Nierenberg, R., and Goldstein, M. Social learning (locus of control) versus attributional (causal stability) interpretations of expectancy of success. Journal of Personality, 1976, 44, 52-68.

Weiner, B. Achievement motivation and attribution theory. Morristown, N.J.: General Learning Press, 1974.

Weiner, B. and Peter, N.A. A cognitive developmental analysis of achievement and moral judgements. Developmental Psychology, 1973, 9, 290-330.

Weiner, B. Theories of motivation: From mechanism to cognition. Chicago: Rand McNally, 1972.

Weiner, B., Heckhausan, H., Meyer, W.V. and Cook, R.E. Causal ascriptions and achievement motivation. Journal of Personality and Social Psychology, 1972, 21, 239-248.

Weiner, B., Frieze, I., Kukla, A., Reed, L., Rest, S., and Rosenbaum, R.M. Perceiving the causes of success and failure. New York: General Learning Press, 1971.

Weiner, B. and Kukla, A. An attributional analysis of achievement motivation. Journal of Personality and Social Psychology, 1970, 15, 1-20.

Weiner, B. and Potepan, P.A. Personality characteristics and affective reactions towards exams of superior and failing college students. Journal of Educational Psychology, 1970, 61, 144-151.

Weisz, J.R. Learned helplessness in black and white children identified by their schools as retarded and nonretarded: Performance deterioration in response to failure. Developmental Psychology, 1981a, 17, 499-508.

Weisz, J.R. Affects of the "mentally retarded" label on adult judgements about child failure. Journal of Abnormal Psychology, 1981b, 90, 371-374,

Weisz, J.R. Developmental change in perceived control: Recognizing noncontingency in the laboratory and perceiving it in the world. Developmental Psychology, 1980, 16, 385-390.

Weisz, J.R. Perceived control and learned helplessness among mentally retarded and nonretarded children: A developmental analysis. Developmental Psychology, 1979, 15, 311-319.

White, R. Ego and reality in psychoanalytic theory. Psychological Issues (Monograph), 3, 1963.

White, R. Competence and the psychosexual stages of development. Nebraska Symposium on Motivation. (Lincoln: University of Nebraska Press, 1960).

White, R. Motivation reconsidered: The concept of competence. Psychological Review, 1959, 66, 297-333.

Zigler, E. The retarded child as a whole person. In H.E. Adams and W.K. Boardman (Eds.), Advances in experimental clinical psychology. New York: Pergammon Press, 1971.

APPENDICES

APPENDIX A

PERCEIVED COMPETENCE SCALE FOR CHILDREN

Pages 127 - 130

WHAT I AM LIKE

Copyright Material

Please contact University of Denver (Colorado Seminary)
Susan Harter, Ph.D. 1978

APPENDIX B

RESULTS FROM ANOVAS

APPENDIX B-1

ANOVA FOR ABILITY ATTRIBUTION

Source	df	Ms	F	p
A (Group)	1	8.028	0.366	0.549
B (Age)	2	10.632	0.484	0.620
AB	2	0.549	0.025	0.975
Within	42	21.956		
C (Set)	2	17.757	4.578	0.013
AC	2	4.424	1.140	0.325
BC	4	2.569	0.662	0.620
ABC	4	1.382	0.356	0.839
Within	84	3.879		

APPENDIX B-2

ANOVA FOR EFFORT ATTRIBUTION

Source	df	Ms	F	p
A (Group)	1	641.778	93.431	0.001
B (Age)	2	18.778	2.734	0.0
AB	2	54.361	7.914	0.001
Within	42	6.869		
C (Set)	2	2.382	0.591	0.556
AC	2	3.465	0.860	0.427
BC	4	2.361	0.586	0.674
ABC	4	6.924	1.718	0.154
Within	84	4.030		

APPENDIX B-3

ANOVA FOR TASK DIFFICULTY ATTRIBUTION

Source	df	Ms	F	p
A (Group)	1	103.361	6.551	0.014
B (Age)	2	46.778	2.965	0.062
AB	2	5.861	0.371	0.692
Within	42	15.778		
C (Set)	2	8.049	2.033	0.137
AC	2	8.965	2.264	0.110
BC	4	1.840	0.465	0.761
ABC	4	7.340	1.854	0.126
Within	84	3.959		

APPENDIX B-4

ANOVA FOR LUCK ATTRIBUTION

Source	df	Ms	F	p
A (Group)	1	140.028	9.105	0.004
B (Age)	2	20.021	1.302	0.283
AB	2	0.840	0.055	0.947
Within	42	15.379		
C (Set)	2	7.563	1.878	0.159
AC	2	4.299	1.067	0.349
BC	4	2.208	0.548	0.701
ABC	4	4.111	1.021	0.401
Within	84	4.028		

APPENDIX B-5

ANOVA FOR BALL ROLLING TASK
PERFORMANCE SCORES

Source	df	Ms	F	p
Group	1	0.43403	0.01	0.9295
Age	2	46.32153	0.85	0.4363
GA	2	32.61736	0.60	0.5558
Within	42	59.75843		
Set	2	4.00069	0.29	0.7487
SG	2	1.86736	0.14	0.8734
SA	4	21.67986	1.57	0.1888
SGA	4	15.78819	1.15	0.3407
Within	84	13.77688		
Trial	9	16.14051	1.12	0.3501
TG	9	18.66088	1.29	0.2403
TA	18	10.19190	0.70	0.8068
TGA	18	6.77014	0.47	0.9700
Within	378	14.46147		
ST	18	9.64190	0.71	0.8015
STG	18	6.79097	0.50	0.9583
STA	36	15.92870	1.18	0.2243
STGA	36	12.87037	0.95	0.5553
Within	756	13.55367		

APPENDIX B-6

ANOVA FOR COGNITIVE COMPETENCE

Source	df	Ms	F	p
Age	2	2.0967	6.251	0.004
Within	45	0.3354		
Total	47	0.410		

APPENDIX B-7

ANOVA FOR SOCIAL COMPETENCE

Source	df	Ms	F	p
Age	2	0.298	1.169	0.320
Within	45	0.255		
Total	47	0.257		

APPENDIX B-8

ANOVA FOR PHYSICAL COMPETENCE

Source	df	Ms	F	p
Age	2	0.418	1.270	0.291
Within	45	0.329		
Total	47	0.333		

APPENDIX B-9

ANOVA FOR GENERAL SELF-ESTEEM

Source	df	Ms	F	p
Age	2	1.183	3.717	0.032
Within	45	0.318		
Total	47	0.355		

APPENDIX C

RESULTS SHEETS

APPENDIX C

INDIVIDUAL RESULTS SHEET

Name _____

Birthdate _____

Age _____ Date _____

School _____

Group _____

Trials

Set 1 | | | | | | | | | | |

Attributions

AB	EF	TD	LU

Trials

Set 2 | | | | | | | | | | |

Attributions

AB	EF	TD	LU

Trials

Set 3 | | | | | | | | | | |

Attributions

AB	EF	TD	LU

SUBJECTIVE QUESTIONNAIRE

1. Is this an easy or a hard task?

2. Do you think if you tried this task again you would succeed or fail?

3. Do you think your friends or classmates would succeed or fail at this task?

4. Do you think your friends would do better than you, worse than you, or the same as you?